LEADERSHIP BEHAVIORS AND COLLECTIVE EFFICACY AS PERCEIVED BY TEACHERS OF SCHOOLS IN THE KATY INDEPENDENT SCHOOL DISTRICT

A Record of Study

by

JOE WILSON GRAHAM

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

May 2007

Major Subject: Educational Administration

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Approved by:

Chair of Committee,	John R. Hoyle
Committee Members	Robert Hall
	Linda Skrla
	Virginia Collier
Head of Department,	Jim Scheurich

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ABSTRACT

Leadership Behaviors and Collective Efficacy as Perceived by Teachers of Schools in the Katy Independent School District. (May 2007)

Joe Wilson Graham, B.S., Texas A&M University; M.S., Texas A&M University

Chair of Advisory Committee: Dr. John R. Hoyle

The primary purposes of this study were to discover any connections between leadership effectiveness and collective efficacy from campuses in the Katy Independent School District. It also was designed to discover other possible connections between teacher demographic variables and collective efficacy. The research study for leadership was based on the leadership work of Kouzes and Posner and the survey they created, the Leadership Practices Inventory (LPI). The collective efficacy piece was based on the work of Roger Goddard and his work on the collective efficacy survey for school personnel.

Leadership effectiveness had a low positive correlation on collective efficacy. All five practices also had a low positive correlation on collective efficacy. These practices are: Model the Way, Inspire a Shared Vision, Challenge the Process, Encourage Others to Act, and Encourage the Heart. The Challenge the Process practice had the highest correlation on collective efficacy.

Each of the practices had breaks at the 30th and 70th percentile groups based on Kouzes and Posner's norming group of approximately 18,000 participants. Schools scoring in the below the 30th percentile group in the Model the Way practice were

statistically significantly different than schools scoring in the middle or upper ranges. Schools scoring in the below the 30th percentile group in the Encourage Others to Act practice were statistically significantly different than those scoring in the middle or upper groups as well. There were no other practices showing significant differences in their respective groups.

Most length of employment variables showed a low correlation on leadership effectiveness and collective efficacy. Length of employment in Katy ISD had a moderate negative correlation on leadership effectiveness.

The researchers categorize schools as schools with high or low collective efficacy based on the teacher comments. High collective efficacy schools commented that they worked as teams and had administrative support. Lower collective efficacy schools mentioned administrative constraints, home life issues, lower administrative support, and lower discipline.

The schools were categorized as positive leadership mentioned administrative support, encouragement, and principals who listened. In more negative leadership schools, teachers commented about communication problems and minimal rewards.

DEDICATION

I dedicate this work to my wife, Shelli, whose support and encouragement has been appreciated, needed, and very helpful. Thank you is not enough to indicate my deepest appreciation for your encouragement in this doctorate. I love you very much and sincerely appreciate your support of our family and me in the years of this work.

To my parents, Joe and Wanda Graham, I want to say thank you so much for encouragement. You both have supported me all throughout my college and career. To mom, your happiness and genuineness have imprinted my life even to this day. Dad, your courage and love is a quality that really has made a difference in my life. I attempt to model my life after these characteristics that each of you demonstrate in your daily lives. I truly thank you for all the years of support.

To Joli, my daughter, you are such a bundle of joy and happiness in my life. You make each day a fun package to open and enjoy together. I hope that your life is filled with happiness, challenge, and reward. I encourage you to continue your random acts of kindness that you always show. Continue to follow God's influence in your life as you grow.

To my grandmother, Maedell Koonce, you have offered so many things in my life. I regret that Granddaddy, Woodrow Koonce, is not here to enjoy this work but his life continues to mold me. Mimi, I also regret that you are not here but I cherish the memory of your life's work in family and education.

To my in-laws, Bill and Nanci Bush, I am grateful for the guidance and encouragement that you have shown my family in this whole process.

ACKNOWLEDGEMENTS

I want to thank Dr. John Hoyle for his guidance and inspiration to me in this profession. There is no doubt about his passion for the 'generic child' that still influences the way I lead even to this day. I am also grateful for his leadership as I have worked on this doctorate.

To Dr. Skrla, thank you for planting the thoughts of a study on collective efficacy and the power this concept has for student learning through effective teacher teams. I truly enjoyed completing this collective efficacy study as it relates to my passion for learning leadership.

To Dr. Leonard Merrell, thank you for providing a model of educational leadership that focuses on creating and maintaining a premier school district. I am also very appreciative of the times you have shared your insight and guidance to me as I seek to improve my leadership.

To Dr. Clark, thank you for laying a foundation of excellence in curriculum, instruction, and leadership as a model for me to follow. You took a chance on allowing me the freedom to try some risky leadership initiatives that have, no doubt, influenced my practice as a leader and researcher. You have always encouraged me to complete this work to which I drew strength.

To Dr. Menius, thank you for your wisdom, 'realistic' advised, leadership and continued inspiration to complete the doctorate. I am honored to work on your team as we work together as principals making a positive difference in the lives of our students and faculty.

To Dr. Jetton, thank you for taking a chance on me as an administrator in Katy and for guiding me in my first years here. As I continued my final drafts, I appreciate your continued support to complete the work.

To Dr. Brown, I appreciate you for allowing me to complete my study in Katy which was a huge help.

To Dr. Lowell Strike, I really do appreciate you for a host of reasons not the least of which is you taking so much time to train and guide me in my leadership principles. You brought me on as a team member at the best high school in America and got me into one of the best districts one could work. You led with integrity and Godly principles that affected so much of what we accomplished and the faculty you created. You allowed me to spread my wings and work in that environment while also encouraging me to complete my doctorate. You have no idea how much I used your dissertation as a guide as I completed my record of study.

To Dr. Jeromy Hollenshead, such a great friend, I cannot believe you and I were college roommates and now have our doctorates. You and I have worked on our college degrees for about the last 17 years together. You encouraged me from the beginning of this path to stay the course even when some of the work is not seen in page numbers but in just ‘feeding the brain’ information. I appreciate you for not only your example to stick it out in this work but for so much more life guidance than there is space to mention here. You are such a great person and a wonderful person I am glad to have as a ‘brother’ in this life.

To many friends, thank you for the at-a-boys and keep-it-ups in completing this work. It was felt all along the way and very appreciated.

To Scott Sheppard, I am very thankful that I met you. You have served as the best accountability partner I could ever have. You were always a step ahead encouraging me to complete the next tasks. I am thankful for the ‘doctorate retreats’ at Lake Toledo Bend and countless hours we spent at the library, half of which we discussed other non-doctorate issues. I am glad to serve alongside you as a fellow administrator but more importantly as a great friend.

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CHAPTER I

INTRODUCTION

Public schools now face pressure from both the state and federal governments regarding the success of students on assessment measures. According to the federal No Child Left Behind (NCLB) Act of 2001, all students are to be tested and all results must be included in the adequate yearly progress (AYP) calculation in reading and mathematics or be subject to improvement sanctions to meet these challenging standards (U.S. Department of Education, 2002, p. 4). In Texas, the Texas Assessment of Knowledge and Skills (TAKS) testing program is in its fourth year of implementation and it aims to both assess students' progress in reading, writing, mathematics, social studies, and science and to hold schools accountable to their collective student success rate (Texas Education Agency, 2003, p. 1).

Seeing that schools are under pressure to succeed, research is ongoing as to what factors significantly contribute to student success. Hoy et al. (2002b) report a number of improvement qualities linked to achievement from the effective schools research such as strong principal leadership, high teacher expectations for student achievement, an emphasis on basic skills, an orderly environment, and frequent and systematic evaluations of students. However, they found that these qualities were generated from a small number of effective and ineffective school post hoc studies and that very few of

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The style and format of this record of study follow that of the *Journal of Educational Research.*

these studies made a priori predictions about what organizational properties were related to school effectiveness or student achievement. Therefore, these researchers proposed a theoretical model study that incorporated a priori design to study two promising organizational properties of collective efficacy and academic press and their effect on student achievement.

They found that collective efficacy and academic press were independently associated with student achievement and that collective efficacy showed larger effects. In their data analysis, socioeconomic variables (SES) and other school-wide or student characteristics were held constant. Researchers found this to be promising since SES is hard for schools to control (Hoy et al., 2002b; Skrla & Goddard, 2002).

Collective efficacy is based in the social cognitive theory (Goddard, 2002a). This theory is founded on a belief that individuals exercise some level of control over their lives (Hoy et al., 2002b). Bandura (2001) adds that people become both producers as well as products of social systems. Central to self efficacy is the exercise of control: "beliefs in one's capabilities to organize and execute a course of action required to produce a given attainment" (Bandura, 1997). However, the unit of analysis in self efficacy is the individual and not the group. When research is concerned with the performances of the group, the unit of analysis is the group, hence, collective efficacy (Goddard, 2002a).

Therefore, the mechanisms of human control also explain the exercise of collective control which is how an individual's beliefs about a group's conjoint capability can work together to produce desired effects (Hoy et al., 2002b). Goddard et al. (2000) further define collective efficacy for educators as the perceptions of

teachers in a specific school that the faculty as a whole can execute courses of action required to positively affect student achievement. Given this understanding, Hoy et al. (2002b) suggest that more research be conducted on how schools and principals can promote collective efficacy. Bandura (1997) recognized the importance of developing high levels of collective efficacy but realized the difficulty of this task given that schools and teachers are confronted with challenges such as student success, public policy, and workplace conditions.

Watson et al. (2001) suggest that collective efficacy studies include a number of potential variables including a potential relationship with leadership. Links between informal leadership and collective efficacy have been shown in small group studies (Pescosolido, 2001). Other relationships between collective efficacy and leadership provide insights into how a leader's individual efficacy affects the group's efficacy (Taggar & Seijts, 2003). Jung and Sosik (2002) found that transformational leadership was positively related to empowerment that was related to collective efficacy. Given that there seems to be a few connections between leadership and collective efficacy and that there are a limited number of studies further defining this, it is suggested that more studies explore this concept (Ilgen et al., 1993; Jung & Sosik, 2002).

Leithwood and Duke (1998) sought to define the leadership landscape based on Western, English-language research literature. The three most specific concepts were instructional leadership, leadership styles, and transformational leadership. A leadership style is the leadership behavior pattern exhibited by an individual (Ireh & Bailey, 1999). Ryska (2002) further suggest that it is the behavior pattern individuals tend to use predominately. These behaviors are linked to assumptions and consequences. Kouzes

and Posner (2002) suggest that it is the A, B, C's of human action, i.e., our assumptions lead to our behaviors which produce our consequences.

The Leadership Practices Inventory (LPI) developed by Kouzes and Posner is a way for leaders to determine their underlying behavioral assumptions. The LPI assesses a leader's behaviors from both a self and others perspective. This instrument includes five categories: modeling the way, inspiring a shared vision, challenging the process, enabling others to act, and encouraging the heart.

For principals in the field of administration, a primary responsibility both at the state and federal level is to have a high student success rate as demonstrated on state assessments. Contributing factors to student success are constantly being sought after by researchers, administrators, and teachers to ensure that students and schools attain acceptable achievement levels.

Statement of the Problem

Collective efficacy and its affects on student achievement are still being explored. However, little is known about the possible correlational relationship between collective efficacy and leadership effectiveness. Watson et al. (2001) suggest that confident leaders on basketball teams positively affect collective efficacy early in group formation. A new body of research links collective efficacy to students' achievement levels (Goddard, 2000; Skrla & Goddard, 2002). If collective efficacy is linked to student achievement, what are leaders such as school principals to do about its creation, maintenance, and enhancement? Currently, no research indicates even a relationship

between a principal's leadership behavior and collective efficacy levels. In fact, Hersey and Blanchard (cited in Ireh & Bailey, 1999) found that even though leaders are encouraged to choose a behavioral pattern based on a situation, leaders can have adaptability problems when trying to correctly match it to the situation. Ryska (2002) suggests that leaders generally tend to use one predominant leadership behavior independent of situation. Whether leaders tend to adapt or operate under one behavior, research is needed to investigate the relationship between leadership behavior and collective efficacy. Small group research reveals some ties but the relationship fades in large groups or larger schools (Jung & Sosik, 2002; Pescosolido, 2001; Watson et al., 2001).

Purpose of the Study

The purpose of this study was to investigate the possible connections between leadership behavior and collective efficacy levels in selected public schools in Katy Independent School District. In order to conduct this investigation, the researcher collected data from each participating school to strengthen the design related to the two major variables, collective efficacy and leadership effectiveness. The secondary purpose is to identify other demographic variables associated with leadership and collective efficacy. These findings have possible leadership development implications regarding the curricular and experiential design for aspiring and practicing principals.

Research Questions

1. What are the connections between leadership effectiveness and collective efficacy as perceived by teachers at selected public schools in the Katy Independent School District?
2. What characteristics within each school are important in understanding the connections between collective efficacy and leadership effectiveness at selected public schools in the Katy Independent School District?

Operational Definitions

Collective Efficacy: The perceptions of teachers in a specific school that the faculty as a whole can execute courses of action required to positively affect student achievement as determined by the collective efficacy assessment instrument (short form) developed by Roger Goddard.

Demographic Profile: These are teacher qualities such as length of employment in Katy Independent School District, length of employment as a teacher in the profession, gender, length of employment under their current principal, and ethnicity.

Katy Independent School District: A school district on the west side of Houston and is defined by the Katy Independent School District board policies.

Leadership Effectiveness: The effectiveness exhibited by principals serving in their leadership capacity within five categories established by Kouzes and Posner. These categories are as follows: Modeling the way, Inspiring a shared vision,

Challenging the process, Enabling others to act, and Encouraging the heart and was assessed by teachers using the Leadership Practices Inventory (LPI) also developed by Kouzes and Posner (2002).

Principal: A person holding a principal position as defined in their employment contract with Katy Independent School District.

Selected Campuses: Any public school in the Katy Independent School District except the Miller Career Center, a career specialty campus, the Opportunity Awareness Center, the district's disciplinary alternative education program (DAEP), and Memorial Parkway Junior High School, the campus where the researcher serves as the principal.

Teacher: A person working as a teacher as defined in their employment contract in the Katy Independent School District.

Assumptions

1. Teachers will understand the purpose of the instrument and answer it to the best of their ability.
2. The researcher will be impartial in collecting and analyzing the questionnaire data.
3. The interpretation of the data will accurately reflect that which is intended.

Limitations of the Study

1. Findings from this study may not be generalized to any other population than the one this sample was taken from.
2. Only identified 2005-2006 Texas public school teachers in the Katy Independent School District will be surveyed.
3. Objectivity of the responses to the survey instrument may be affected due to the fact that a self-survey was asking local in-school personnel to asses their own collective efficacy levels and may reflect personal biases.
4. It is impossible to identify all the variables that could affect leadership effectiveness and collective efficacy. Because of this complexity of variables, the researcher will focus on those variables deemed important.

Significance of the Study

Collective efficacy is an important school property for explaining student achievement and school effectiveness and needs further study. With the current pressures of two major accountability measures, leaders should be aware of the factors that contribute to collective efficacy and nurture them (Hoy et al., 2002a). Small group studies where the groups range from 3 to 15 suggest a tie between leadership and collective efficacy levels (Jung & Sosik, 2002; Pescosolido, 2001). The impact of leadership behavior on collective efficacy is currently being investigated. In recent studies, leadership behavior and staff behavior led to high collective efficacy further

suggesting that leadership training is needed to build leader role efficacy to increase efficacy beliefs held by team members (Tagger & Seijts, 2003).

This investigation will enable researchers and leadership developers to establish a potential relationship between leadership behavior and collective efficacy. As the evidence mounts suggesting that collective efficacy is directly linked to student achievement, learning about determinants of collective efficacy also increases. As principals better understand their own particular behavioral patterns, they are better able to see how it will affect their organization's collective efficacy levels. Researchers and leadership developers can help principals in developing their leadership through training thereby increasing the collective efficacy of their campus.

Organization of the Study

There are five distinct chapters to this record of study. An overview of the research including a statement of the problem, the purpose of the study, operational definitions, research questions, assumptions and limitations of the study, as well as outline the significance of the study complete chapter I. A review of the literature on collective efficacy, collective efficacy and leadership studies, and leadership is provided in Chapter II. Chapter III outlines the methodology of the research and Chapter IV describes the results and analysis of the research. Chapter V completes this record of study which includes the researcher's conclusions and recommendations for further study.

CHAPTER II

OVERVIEW OF LITERATURE

Introduction

A review of literature will reveal a picture of collective efficacy research and foundations, leadership behaviors, leadership models of research, and leadership as it relates to collective efficacy. Collective efficacy is a relatively new concept that has a growing knowledge base including four sources of shaping information. Those include mastery experience, vicarious experience, social persuasion, and affective states. Each of these will be developed. There are also a few reports that communicate collective efficacy research as it relates to leadership effectiveness. Those will also be communicated in this review of literature.

Leadership has been talked about and communicated for many years. An overview of leadership research, models, and theories will be explained. A list of leadership definitions will start that review section as an indication of its allure and difficulty in research. Following this is an overview of organizational thinking that includes the classic organizational thought, human relations approach, social science approach, emerging non-traditional perspectives, and ending with a discussion on the contingency schema for understanding leadership. Transformational leadership and the four influencing behaviors of idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration will be developed. This chapter will

conclude with a review of Kouzes and Posner's (2002) work on the five leadership practices.

Current Accountability Environment

Texas public schools now face two significant accountability measures. The federal government revamped the Elementary and Secondary Education Act of 1965 (ESEA) by creating the No Child Left Behind Act of 2001. The Texas accountability and NCLB measures are run by the use of state mandated testing called the Texas Assessment of Knowledge and Skills (TAKS). The NCLB holds schools accountable in math and reading whereas the Texas measure considers those two subjects plus science and social studies. The federal objectives are clearly expressed in the NCLB executive summary:

> The NCLB Act will strengthen Title I accountability by requiring States to implement statewide accountability systems covering all public schools and students. These systems must be based on challenging State standards in reading and mathematics, annual testing for all students in grades 3-8, and annual statewide progress objectives ensuring that all groups of students reach proficiency within 12 years. Assessment results and State progress objectives must be broken out by poverty, race, ethnicity, disability, and limited English proficiency to ensure that no group is left behind. School districts and schools that fail to make adequate yearly progress (AYP) toward statewide proficiency goals will, over time, be subject to improvement, corrective action, and

> restructuring measures aimed at getting them back on course to meet State standards. Schools that meet or exceed AYP objectives or close achievement gaps will be eligible for State Academic Achievement Awards. (U.S. Department of Education, 2002, p. 4)

In addition to NCLB requirements, Texas has its own unique student expectations. The opening paragraph of the 2002-2003 Technical Digest outlines the Texas program:

> The goal of the Texas assessment program is to measure student progress toward achieving academic excellence. The primary purpose of the state student assessment program is to provide an accurate measure of student achievement in the areas of reading, writing, mathematics, social studies, and science. The test results are also used as a gauge for institutional accountability. (Texas Education Agency, 2003, p. 1)

Educators are clearly expected to ensure student learning in public schools. Murphy and Louis (cited in Goddard et al., 2000) note that whereas teachers are directly in charge of student learning, administrators are in charge of creating or maintaining an organization that promotes teaching and learning. Leithwood (2001) suggested four possible approaches to schools and their leaders as solutions to the accountability expectations. These four include a marketing approach where clients are able to choose the school that best fits their needs. Decentralized decision making is the second approach that allows both parents and school administrators greater control over their resources and decisions. The professional approach is the third measure mentioned that gives teachers more decision making authority and codified practice statements for use. The final approach Leithwood discovered was in management and the processes and

practices a school would enact so that student learning was taking place and being monitored. DeMoss (2002) also studied principals and their leadership styles when confronted with high-stakes accountability. She conducted case studies from eight schools in the Chicago area and found leadership practices that fell into six types corresponding to a continuum from those whose practices supported increased achievement to those who might be deemed detrimental to test score improvement. Goddard et al. (2000) suggest that as these student accountability policies continue to take shape, the time is ripe to consider school organizational practices that produce student achievement.

Brief Overview of Effective Schools Research

School leaders are becoming attuned to school practices that work. Early in this process of discovering these practices, researchers developed lists of beneficial school characteristics based on comparisons between schools that were successful and those that were not. Edmonds and Stedman (cited in Hoy & Miskel, 1996) were some of the first to do such work and produced a five-factor formula for effective schools. Characteristics included: strong principal leadership, high teacher expectations for student achievement, an emphasis on basic skills, an orderly environment, and frequent/systematic evaluations of students. This formula and other lists were products of research that did not make a priori predictions about these qualities. Furthermore, these studies did not provide theoretical explanations as to why certain school characteristics promoted student achievement (Hoy et al., 2002a).

In the pursuit of discovering school characteristics associated with student achievement, researchers were frequently exposed to a socioeconomic status (SES) variable that they found to be almost uncontrollable. SES refers to the home environment and the educational resources it provides, or withholds, from the student. Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, and York (cited in Hoy et al., 2002b) indicate that SES tends to be a strong predictor of student success and that it is hard to find other variables comparable in strength. However, some promising research is emerging that brings to light controllable school variables that positively affect student achievement and control for SES. For example, Goddard, Tschannen-Moran, and Hoy (cited in Skrla & Goddard, 2002) report that teacher trust in students and their parents was predictive of math and reading achievement after controlling for the hard to control school variables of student characteristics and SES.

Research on Collective Efficacy

In addition to teacher trust that controls for SES, two other promising school properties are emerging that hold promise to improving student achievement. Academic press in schools and collective efficacy are those two properties and are within the realm of being controlled in a school organization (Hoy et al., 2002b). Academic press is a school wide property that deals with the extent to which a school is driven to academic excellence. It captures a number of qualities such as teachers setting high but achievable goals and an orderly and serious school environment. Many of these qualities are similar to the effective school research mentioned earlier (Hoy et al., 2002b).

Collective efficacy is relatively a new concept with properties analogous to self efficacy (Goddard, 2003; Skrla, 2002). Self-efficacy refers to a person's belief about their own capabilities to exercise control over their own level of functioning and over events that affect their own lives (Bandura, 1993). Woolfolk and Hoy (1990) report that teachers sense of efficacy affects their direct instructional practice and their overall attitude toward the educational process. Taking this individual teacher efficacy concept to the organizational level, Bandura (1997) reports that, ". . . collective efficacy is concerned with the performance capability of a social system as a whole" (p. 469). Goddard (2003) defines collective efficacy as, "the perceptions of teachers in a school that the faculty as a whole can organize and execute the courses of action required to have a positive effect on students" (p. 184). Because the unit of analysis in collective efficacy is the organization and not the individual, social norms, characteristics, and systems all come into play (Bandura 1993, 1997; Hoy et al., 2002a).

Indeed, Bandura (1997) notes this when he said:

> . . . the analysis of the culture of organizations should be concerned not only with traditions of how things are done but also with shared beliefs about the organization's capabilities to innovate and perform effectively. Because of their diverse impact, an organizations beliefs about its efficacy to produce results are undoubtedly an important feature of its operative culture. (p. 476)

This staff belief system creates a school culture that can have vitalizing or demoralizing effects on how well schools function as a social system (Bandura, 1993). Since most of this early research on efficacy was done at the individual or teacher level, a brief overview of its findings is discussed.

Collective Efficacy Beginnings

Prior to the current research on collective efficacy, teacher efficacy was studied with promising findings (Goddard, 2003). Armor, Conroy-Oseguera, Cox, King, McDonnell, Pascal, Pauly, and Zellman (cited in Goddard, 2002a) suggest that the earliest connection between efficacy and student achievement was two research evaluations conducted by the Rand Corporation of projects funded by Title III of the Elementary and Secondary Education Act dealing with reading gains among students in Los Angeles schools. Using the California Test of Basic Skills, researchers found that students with highly efficacious teachers in a special reading program had greater reading gains. These gains in reading happened indirectly with teacher efficacy shaping teacher behaviors which in turn affected student achievement. Gibson and Dembo (cited in Goddard, 2002a) report that teacher efficacy may have an influence on certain patterns of behavior that are known to influence achievement gains. Even though this early study of efficacy was found to indirectly affect student learning, it started a research basis for further study.

Continued research found relationships between teacher efficacy and student achievement (Goddard, 2002a), student motivation (Bandura, 1993), teachers' adoption of innovation, and teachers' classroom management strategies (Goddard, 2002a). These studies provide ample evidence for the positive link between teacher efficacy and student achievement because these strategies and techniques and attitudes are widely accepted as educationally productive (Goddard, 2003).

Other teacher efficacy studies reveal yet more connections to other school characteristics. There are several school contextual variables that are helpful in

understanding the relationship between these two concepts. Moore and Esselman (cited in Goddard, 2003) found that teacher efficacy was positively associated with school climate, lack of impediments to effective instruction, and teacher empowerment. Knobloch and Whittington (2002) found that education, experience, and support can help novice teachers feel more efficacious. Hoy and Woolfolk (cited in Goddard & Goddard, 2001) found that a principal's influence with superiors and the academic press of a school influenced teacher efficacy. Raudenbush et al. (1992) showed that teacher efficacy between teachers varied based on the students' level of preparation and engagement. Raudenbush et al. (1992) further noted that teacher control and staff collaboration were positively related to teacher efficacy. Goddard (2003) indicates that there has been little work to investigate the effects of school context on teachers' efficacy beliefs.

Teachers are aware of and influenced by the social processes and collective beliefs that characterize a school. Teachers with modest efficacy might persist more in the face of personal obstacles and setbacks in a school where teachers tend to believe in the group's conjoint capability to educate the students successfully (in schools with high collective efficacy). The opposite is also true whereby teachers with modest efficacy may not persist as long when faced with obstacles and setbacks in a school with low collective efficacy (Goddard & Goddard, 2001).

Allinder (cited in Goddard & Goddard, 2001) discovered that teachers with strong perceptions of self-capability tend to employ classroom strategies that are more organized and better planned. Teachers were also more student centered and humanistic (Woolfolk & Hoy, 1990).

Teacher efficacy has also been related to a number of other variables such as DaCosta & Riordan findings (cited in Goddard, 2003) that teacher efficacy is strongly related to trust, DeForest & Hughes link to openness (cited in Goddard, 2003), and Lee, Dedrick and Smith's relationship to job satisfaction (cited in Goddard, 2003). Tschannen-Moran and Hoy (2000) further indicate that trust is recognized not only as related to teacher efficacy but as a vital element in well-functioning organizations. Trust has its roots in social settings because it deals with relationships between people and the resulting effect. The following section explains the similarities, differences, and theoretical underpinnings associated with teacher and collective efficacy.

Foundations of Efficacy Principles in Social Cognitive Theory

Albert Bandura's work on social cognitive theory helps to establish the link between teacher (or individual) efficacy and collective efficacy (individual efficacy at the group level). Social cognitive theory indicates that teachers' perceptions of self and group capability influence their actions and it also suggests that these actions will be judged by the group relative to the group's norms such as those set by collective efficacy beliefs (Goddard & Goddard, 2001). According to Coleman (cited in Goddard & Goddard, 2001), norms develop to permit group members some control over the actions of others when those actions have consequences for the group. Even though teachers work in separate rooms, the collective group norms do have an influence on their individual behaviors. Bandura (1997) explains how even loosely couple organizations influence their members as follows:

> People working independently within a group structure do not function as social isolates totally immune to the influence of those around them. Their sense of efficacy is likely to be lower amidst a group of chronic losers than amidst habitual winners. Moreover, the resources, impediments, and opportunities provided by a given system partly determine how efficacious individuals can be, even though their work may be only loosely coupled. (p. 476)

Coleman (cited in Goddard & Goddard, 2001) suggests that when a teacher's actions are outside the group norm, that teacher will likely be sanctioned by the group. The sanction(s) are also likely to be proportionate to the degree of infraction outside the norm. Therefore if the school belief is that teachers are to successfully teach students, the normative and behavioral environment will pressure teachers to persist in this educational effort. Additionally, this pressure will be accompanied by social sanctions for those teachers who fail to meet this norm (Goddard & Goddard, 2001).

Efficacy beliefs are based in an agency concept explained in the social cognitive theory (Goddard, 2003). Human agency refers to the ways individuals exercise some level of control over their lives. Agency is the intentional pursuit of a course of action (Hoy et al., 2002b). However, there is an assumption that people will pursue a particular direction. Social cognitive theory establishes that people are more likely to pursue goals that seem challenging, rewarding, and attainable. Therefore, these goal qualities have to be present prior to the concept of agency coming into play (Goddard, 2003).

If individuals can exercise some level of control over the way they accomplish something (agency), they have to first believe that the way they chose will be sufficiently adequate. This belief is the core essence of efficacy. Simply stated, self-

efficacy is the belief in one's capabilities to organize and execute a course of action required to produce a given attainment (Bandura, 1997). Efficacy is key to agency because individuals or collectives are more likely to pursue activities for which they believe have the capability to succeed (Goddard & Goddard, 2001). Bandura also suggests that efficacy expectations are interrelated to outcome expectations (cited in Woolfolk & Hoy, 1990). These subtle, yet distinct differences will be explained directly.

Given that there is control over the way goals are accomplished (agency) and that one has to believe that what they choose will be successful (efficacy), these social cognitive theory concepts of personal agency and efficacy operate within a broad network of sociostructural influences and thus the theory extends the human agency analysis mechanisms to the exercise of collective agency (Bandura, 1997). Educationally speaking, schools as a whole can act purposefully (agentive) in pursuit of their educational goals. For example, one school may focus on improving student performance on state assessments whereas another school may focus on improving teacher retention. These purposeful pursuits reflect the exercise of organizational agency (Goddard, 2003). The understanding of personal agency will then help explain organizational agency. Furthermore, the understanding of individual efficacy can also be extended to collective efficacy, that is, how individuals' beliefs about a group's conjoint capability can work together to produce desired effects (Bandura, 1997).

To further understand the important role of efficacy beliefs in the exercise of individual and organizational agency, it would prove beneficial to learn about the differences in efficacy and outcome expectations. Goddard (2003) explains that since

efficacy deals with a belief about one's capabilities in reference to a goal, it would be beneficial and necessary to consider the ends that one pursues. "Outcome expectations, on the other hand, reflect a person's belief that given attainments (i.e., certain ends) will lead to particular outcomes," Goddard explains (p. 187). In other words, outcome expectancy is a person's or a group's belief that certain actions will likely result in a given outcome. It does not deal with whether one or a group feels that they are capable of carrying out those actions but rather that those actions are reasonably thought of as actually producing the given goal (Goddard, 2003). Bandura (cited in Watson et al., 2001) suggest that outcome expectations are judgments about the likely consequences of specific behaviors in a particular situation and that efficacy expectations are the individual's belief that he or she is capable of achieving a certain level of performance in that situation. Goddard (2003) points out that noting these differences, albeit subtle, do highlight a few critical points. First, it suggests that to effectively study efficacy, one has to consider the goals because in the absence of this consideration, the focus is on the belief that one can effectively carry out tasks independent of what the task ought to produce. Teachers may effectively use a teaching strategy but students may not learn from it. Therefore, efficacy assessment must include the outcomes because in the absences of such consideration, teachers that effectively carry out teaching strategies independent of student learning would be considered highly efficacious even when the strategy did little to impact student growth or potentially retard it. The second point is that one may have high outcome expectancy for a given goal but have low teacher efficacy. In the second point, this teacher may reasonably conclude that certain teaching strategies effectively carried out will likely produce the pursued outcome but that they

themselves do not believe they have the capability to effectively carry out those strategies. Teachers in this situation are more likely to agree with school-wide goals of student achievement and perhaps, rewards based on these pursued goals yet not feel like they can effectively contribute to those ends. Given that efficacy and outcome expectancies are situation specific and are connected to the goals, past performance will influence beliefs about the self and group capability (Goddard, 2003).

Four Collective Efficacy Shaping Sources

Bandura (1997) postulates four sources of efficacy shaping information that include things such as past performances. These four sources are: mastery experience, vicarious experience, social persuasion, and affective state.

Mastery experience is an enactive experience which means that the group has personally experienced as past success or failure. These experiences influence the collective efficacy at a campus. If a campus has experienced success, this will bolster teachers' beliefs in the capability of the faculty to successfully educate their students. Teachers believe that they can succeed with their students because they, personally, have seen success happen (Skrla, 2002). Mastery experience also happens to be the strongest of the four efficacy shaping sources (Goddard, 2002a). Mastery experience was the chief source that explained about two thirds of the variance between school's collective efficacy even after controlling for school demographics and socioeconomic status. If past school successes can raise the collective efficacy, the same can be said about past school failures in that they can lower the collective efficacy (Goddard, 2003). In fact,

Goddard (2003) found that past achievement was a stronger predictor of collective efficacy than was school race and socioeconomic status.

Vicarious experience is the second efficacy shaping source. If one is influenced by personal past experiences, they can also be influenced by another's past experience, even though the impact is not as strong as mastery experience. Vicarious experience is stronger when another group attains similar goals in the face of similar opportunities and obstacles (Goddard, 2003). As educators across the state seek to find programs that work, teachers are commonly sent to other high performing schools to learn about what they are doing to attain high scores (Skrla, 2002). At an individual level, teachers attempting to effectively teach can witness another teacher effectively implementing a strategy whereby students grew. This non-personal experience is a vicarious experience that can shape one's efficacy (individual or collective).

Social persuasion is another source of impacting collective efficacy levels. Things such as talks, book studies, workshops, professional development opportunities, and feedback about achievement can inspire action (Goddard, 2003; Skrla, 2002). Social persuasion alone is not likely to compel profound organizational change, but in conjunction with models of success and positive direct experience, it can influence the collective efficacy of a school. Persuasion can also encourage group members to try innovative practices, respond with flexibility, and persist in the face of difficulty. For example, schools that are high in collective efficacy have teachers that understand their goals and persist in their efforts to attain them. Teachers new to that high efficacy school learn about this school culture and conclude that going the extra mile and educational success are the norm. This high academic press norm encourages all

teachers to do what is takes to excel. Even though expectations of peer groups do not always take precedence, organizational life is nevertheless filled with social exchanges that communicate expectations, sanctions, and rewards to members (Goddard, 2003; Skrla & Goddard, 2002).

Schools have affective states that are influenced by collective successes and failures rounding out the last efficacy shaping source. High efficacious schools can tolerate pressure and can continue to function without debilitating consequences whereas the opposite is also the case. Affective states exert considerable influence over how organizations interpret and react to the myriad challenges they face (Goddard, 2003).

Collective Efficacy and Leadership

A Brief Overview of Collective Efficacy Research

Collective efficacy is becoming an important group level characteristic to research given past results that strongly established a link between collective efficacy and group performance. For example, it has been positively related to athletic performances such as volleyball teams, linked to undergraduates working on a model construction task and brainstorming task (Tagger & Seijts, 2003), and high school students collectively engaged in a muscular endurance task (Watson et al., 2001). Gibson's (cited in Tagger & Seijts, 2003) research also reveals that collective efficacy influences the goals that a group sets and Mulvey and Klein (cited in Tagger & Seijts, 2003) found that collective efficacy affects the amount of effort team members put into their endeavors. Lastly, Seijts, Latham and Whyte (cited in Tagger & Seijts, 2003)

discovered that collective efficacy impacts a team's staying power when its efforts fail to produce immediate results.

Researchers have also sought to continue the knowledge base and to go beyond the four noted efficacy shaping sources by studying how group efficacy is built, increased, or formed (Goddard & Skrla, 2006; Pescosolido, 2001). Goddard and Skrla (2006) completed a study to discover factors that influence collective efficacy perceptions in schools specifically if a schools social composition had any affect on collective efficacy. Their research design included teacher-level and school-level predictors. Teacher-level predictors were race/ethnicity, gender, and teaching experiences and the school-level predictors were academic, racial, and socioeconomic student body composition variables and experiential and racial composition of the faculty. Tagger and Seijts' (2003) research was designed to discover process variables and predictors in their study of team performance in relation to efficacy beliefs. Collective efficacy research that investigates its connection with leadership has also been conducted.

A basic requirement of leadership is to enable effective collective action. By extension, an important function of leadership may be to strengthen the efficacy beliefs of group members (Watson et al., 2001). A few leadership studies address this piece of the collective efficacy research. As such, Goddard (2002a) suggested research be conducted that analyzes the relationship between school practices and collective efficacy as well as discovering the possible connections between a principal's efficacy and collective efficacy. Concepts such as self-efficacy, optimism, recent team performance, group size, and confident leadership have been studied (Watson et al., 2001). Leader

and staff role efficacy, informal leadership, and transformational leadership add to the growing research base on collective efficacy and leadership (Jung & Sosik, 2002; Pescosolido, 2001; Tagger & Seijts, 2003). Chen and Bliese (cited in Tagger and Seijts, 2003) found that leadership behaviors were directly related to collective-efficacy. Bohn (2002) sought to discover why organizations would have different efficacy levels and hypothesized that leadership would be one of the components. The people (followers) gave open ended responses and the researchers reported that leadership was the category given the most credit for affecting organizational confidence (collective efficacy). Twenty-four (24%) of the responses were in this category. Executives (leaders) also indicated the same thing but more strongly with 50% of the responses in the leadership category. These few studies seem to indicate a growing base of research that may reveal potential links between leadership and collective efficacy.

Three Types of Current Collective Efficacy and Leadership Research

Tagger and Seijts (2003) report that as organizations use more of a team approach in their leadership, more research has emerged on how leadership processes affect team performance. They communicated that these are two beliefs about team leadership that drive the research interests when they said, “First, it has long been believed that team leaders have a greater impact on team performance than other team members. Second, an important reason why teams fail to achieve their potential may be found in poor team leadership” (p. 132). Informal leadership is a one aspect within collective efficacy studies receiving consideration. A basic distinction can be made between formal or designated leadership and informal or emergent leadership. An

informal leader is a leader that comes from the group or team and is chosen by the team. They also have influence over other group members but do not receive special compensation or rewards and also do not hold the power of hiring and firing (Tagger and Seijts, 2003). Pescosolido (2001) suggests that in an age of decentralization and site-based management, there is a growing need to further understand the role of informal leadership. As a caveat, there is also a growing need to understand how external leadership can be damaging to team performance in a self-managing team environment (Tagger & Seijts, 2003).

Research is revealing that informal leaders have a strong influence on group processes, norms, and outcomes (Bass, 1990; Tagger & Seijts, 2003). In addition, it also indicates that informal leaders have strong effects on group goals and subsequently on group performances. However, other research by Silver and Bufiano (cited in Tagger & Seijts, 2003) suggests that groups high in their group efficacy tend to set higher group goals and subsequently achieve higher group performance. Kirkpatrick and Locke (cited in Tagger & Seijts, 2003) found that team leaders who provided task cues such as communicating what has to be done or how the goal can best be attained had a positive and significant effect on efficacy beliefs held by team members and a simulated production task. Tagger and Seijts (2003) found that team leaders should focus on ways to increase efficacy beliefs held by team members for their own leadership role. Gabarro and Kotter (cited in Tagger & Seijts, 2003) also found that team members should coach team leaders on their leadership behaviors in sort of a “managing upwards” strategy to increase the leader role-efficacy and leader behavior. Combining all these findings,

informal leaders may have an effect on group efficacy and that this may be the means by which they influence group goals and thus group performance (Pescosolido, 2001).

In addition to informal leadership studies, overall leadership effectiveness research has been conducted. Leadership theory suggests that exceptional leaders influence their followers' sense of collective efficacy. There are several reasons that leadership is critical to collective efficacy. Effective leadership contributes to a sense of smooth functioning. These leaders can directly enhance the functioning of groups through behaviors aimed at effective coordination and removing obstacles to effective performance. In addition, leaders who model positive attitudes and behaviors may have an important social influence on collective efficacy (Watson et al., 2001). Watson et al. (2001) suggest that leaders who display confidence influence collective efficacy through vicarious and social persuasion avenues by their modeling of confidence and success. Kouzes and Posner (2002) assess leadership effectiveness in five different categories of which 'modeling the way' is one which is similar to Watson et al.'s suggestion.

Effective leadership studies have reported that leadership effectiveness may impact a groups' collective efficacy more in early development and later in the sustaining of those efforts (Watson et al., 2001). Watson et al. (2001) showed that teams with more confident leadership had stronger collective efficacy levels at the beginning of the season and especially when the prior season had a poor record. They propose that their verbal persuasion is strongly linked to elevated collective efficacy levels versus performance since performance is basically absent at the early stage of development. Further research is suggested to determine the mechanisms by which confident leaders influence collective efficacy levels.

Transformational leadership has been studied in relation to collective efficacy and group outcomes. James McGregor Burns first introduced this concept into leadership research circles in 1978 as a new leadership paradigm when he studied leadership and politics. This paradigm focuses on initiating changes among followers and transforming followers' personal values and group and organizational cultures. Transformational leadership counters with transactional leadership, its predecessor, in that transactional leadership is based on an exchange process whereby followers are rewarded for accomplishing specified goals or achieving certain levels of performance. (Jung & Sosik, 2002)

Transformational leadership was found to have an effect on collective efficacy through two mediating factors: empowerment and group cohesiveness (Jung & Sosik, 2002). These researchers confirmed Kouzes & Posner's (2002) thought that empowered followers are more likely to initiate any work they feel is interesting and important. As stated earlier, as organizations move toward participatory management techniques such as site-based management in schools, leaders need to concern themselves with techniques that shift the focus from one-on-one to one-on-group leadership building processes. As Jung and Sosik (2002) suggest, this requires both motivation strategies for individual followers and how to cultivate a high level of collective commitment toward a common goal. Below is an overview of leadership research from its beginnings to current research theories and models.

Theoretical and Historical Foundations of Leadership and Organizations

Leadership studies have attracted many people and produced much discussion. Defining leadership has been one of the hardest tasks people have attempted in trying to gain a deeper understanding of this concept. After a comprehensive review of the leadership literature, Stogdill (cited in Yukl, 2002) concluded, ". . . [that] there are almost as many definitions of leadership as there are persons who are attempted to dine the concept" (p. 22). Warren Bennis (1989) suggested that leadership is like beauty: it is hard to define, but you know it when you see it. Lashway (1999) describes defining leadership to that of trying to dismantle a marshmallow: you can do it, after a fashion, but not very precisely, and not without getting your hands sticky. In addition to these, below is a list of leadership definitions by other noted authors and leaders.

- Winston S. Churchill, in addressing boys of Harrow School on October 29, 1941 expressed it this way when he said, "Never give in, never give in, never, never, never, never – in nothings, great or small, large or petty – never give in except to convictions of honour and good sense!" (Churchill, 2003, p. v)
- "The leader is the individual in the group given the task of directing and coordinating task-relevant group activities." Fred E. Feidler (cited in Hoy & Miskel, 1996)
- "Leadership is the initiation of a new structure or procedure of accomplishing an organization's goals and objectives or for changing an organization's goals and objectives." James Lipham (cited in Hoy & Miskel, 1996)

- "After long, difficult introspection, I developed my own definition of leadership: Leadership is a matter of how to be, not how to do it." Frances Hesselbein (Former CEO of the Girl Scouts and Chairman and Founding President of the Drucker Foundation) (Hesselbein, 2002)
- "The true measure of leadership is influence—nothing more, nothing less." John C. Maxwell (Maxwell, 1998)
- "Leadership is an interaction between members of a group. Leaders are agents of change, persons whose acts affect other people more than other people's acts affect them . . . Leadership occurs when one group member modifies the motivation or competencies of others in the group. Stogdill (cited in Bass, 1990)
- Leadership is the process of persuasion by which a leader or leadership group induce followers to act in a manner that enhances the leader's purposes or shared purposes." Sergiovanni (cited in Hoy & Miskel, 1996)
- Visionary leaders have: a belief in a cause greater than themselves; the ability to communicate a clear message in simple terms; and the commitment to persist under the most difficult circumstances (Hoyle et al., 1998)

Yukl (2002) suggests that the research and conceptualization of leadership has led to a vast and bewildering literature base. The use of other terms such as power, authority, management, administration, control, and supervision have also added to the confusion of describing leadership. Bennis (cited in Yukl, 2002) described the confusion this way:

> Always, it seems, the concept of leadership eludes us or turns up in another form to taunt us again with its slipperiness and complexity. So we have invented an endless proliferation of terms to deal with it . . . and still the concept is not sufficiently defined. (p. 22)

Furthermore, this literature base has only been partially successful in organizing leadership into major approaches or perspectives.

Theories are a set of interrelated concepts, assumptions, and generalizations intended to explain regularities in behavior, approaches, or perspectives and as such, many leadership theories exist. Theories offer a frame work or a general mode of analysis of practical events. Research is related to theory in that it further defines and clarifies those generalizations into more concrete concepts which can actually be studied. Models go beyond theories in that they attempt to show the interplay among variables contained within theories. It is the interplay of concepts that formulate a generalization (Hoy & Miskel, 1996). Bass (1990) suggests that both theories and models can be useful in defining research problems in the development and application of leadership.

According to Yukl (2002), one of the more useful ways to classify and understand leadership effectiveness is by the main variable studied. Using this framework, three types of leadership variables emerge for understanding leadership effectiveness including: (1) characteristics of the leader, (2) characteristics of the followers, and (3) characteristics of the situation. However, Yukl further suggests that leadership research generally emphasizes one category more than others and this results in him breaking down the categories in five approaches: (1) the trait approach, (2) the

behavior approach, (3) the power-influence approach, (4) the situational approach, and (5) the integrative approach.

Bass (1990) considers leadership studies using a different framework to which he produces a different leadership breakdown. He briefly touches on some popular leadership theories but adds a caveat that grounded theory should be used for diagnosis, training, and development and that some of the first theories are not as grounded as others. He then reflects on some better known theories. Theories such as the great-man, trait, situational, personal-situational, psychoanalytic, political, and humanistic are listed. Bass and Yukl's research went through approximately three phases. The leader centered approach was common in their early research designs. Subsequent designs focused on situational variables and a more combined design approach dominated more recent leadership research. These designs are indicative of the prevailing theories of their time (Yukl, 2002).

Classic Organizational Thought

Administrative theory is defined as the art and science of applying knowledge to administrative and organizational problems. Hoy and Miskel (1996) suggests four general phases of administrative theory have evolved over the past ninety years. These include the classical organizational thought period, the human relations period, the social science approach, and the emerging non-traditional perspectives.

Wen (1999) suggests that the first leadership studies were conducted in the early 1900s by two predominant theorists, Frederick Taylor and Henri Fayol. Tasks accomplishment was the main variable driving their research. Referred to as the

scientific management approach, Taylor and his followers conducted time and motion studies to find out how the human body performs best. These studies assessed workers' physical limits and described the best way for performing a given task. Given such level of analysis, Taylor's researchers and followers became known as human engineers in that they sought out ways for people to perform so as to produce more in a shorter time (Hoy & Miskel, 1996).

Fayol's background in administration both in business and teaching brought about a different approach to answering some of the same concerns. He worked from an administrative top down approach in trying to answer similar questions versus Taylor's worker based bottom up approach. Fayol's attempts to produce more in a timely manner resulted in recommendations to administrators. His concepts included the dividing the labor, supervised groups called span of control, and categorization of workers/administrators called the principle of homogeneity. The human engineer equivalent from the scientific management approach in Fayol's work was called the scientific manager. This administrative inquiry gave the second and complimentary piece to the classic organizational period (Hoy & Miskel, 1996).

Human Relations Approach

The classic organizational thought was a rigid conception of organizations and people and neglected both individual idiosyncrasies and the social components of people at work. Consequently this led to the human relations period influenced by Mary Parker Follett, Elton Mayo, and Fritz Roethlisberger. Follett's views were not based in studies as much as it was her views expressed in a series of papers dealing with the human side

of administration. Her suggestion, in particular, was that of developing and maintaining dynamic and harmonious relationships. She also suggested that conflict was not a wasteful thing but, rather, that is was an opportunity for all to deal with differences in a productful manner (Hoy & Miskel, 1996).

The Hawthorne studies are the ones credited with providing a theoretical basis for this human relation period. The Hawthorne plant of the Western Electric company in Chicago was the study site for investigating how light brightness would affect production levels. The puzzling results led Elton Mayo and Fritz Roethlisberger to conclude that both human and social aspects were the main determiner of production levels, not the scientific organizational thinking of the prior period. The study itself was analyzed and researchers found that participant's self-image and interpersonal relations were different than before (Hoy & Miskel, 1996). Researchers later concluded that informal work groups emerged with their own norms for appropriate behavior of group members (Wen, 1999).

Social Science Approach

Hoy and Miskel (1996) suggests that the social science approach combines the formal structure of the classical organizational period and the social relation quality from the human relations approach and then adds some concepts from psychology, sociology, and political science. Chester Barnard used a social science approach to explain organization life in his work Functions of the Executive. Barnard (1940) explains that he categorized his analysis in terms of structural and dynamic concepts. Hoy and Miskel (1996) point out that Max Weber helped in the understanding of organizations as a social

system as he described bureaucracy and authority. Parsons (cited in Hoy & Miskel, 1996) explained that an organization is an open system which is a social system dependent on and influenced by its environment.

Emerging Non-traditional Perspectives

Some perspectives of administrative theory are different than the three previously explained approaches in that they use a different framework of explanation. Rosenau (cited in Hoy & Miskel, 1996) suggests that non-traditionalist prefer explanations involving fragmentation versus unity and uniqueness versus the regular. Hoy and Miskel (1996) indicate that this perspective also embraces subjectivity, indeterminacy, irrationality, illusion, and personal interpretation. Post-modernism, critical theory, and the feminist theory are three perspectives used to explain this fourth approach. These perspectives question the assumptions of the contemporary organizational thought and are critical of scientific social analysis.

Contingency Schema for Understanding Leadership

Given these definitions, the historical explanations of administrative theory, and the need to understand educational administration, Hoy and Miskel (1996) offer this question to guide leadership understanding: What traits under what situations are important to leader behavior and effectiveness? This is the driving question behind a contingency theory that combines four sets of concepts. These include traits of the leaders, characteristics of the situation, behaviors of the leader, and the effectiveness of the leader. Figure 1 demonstrates the contingency framework.

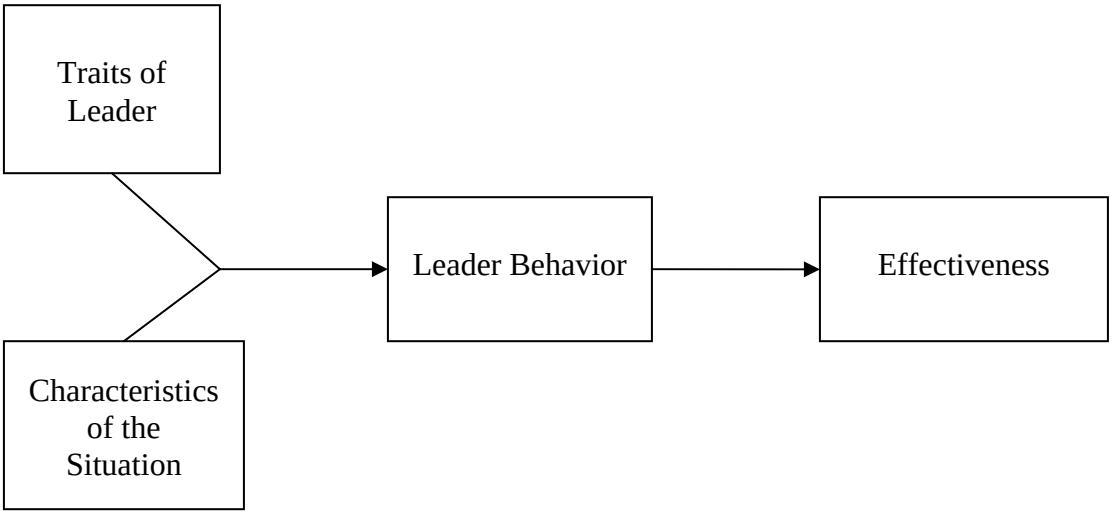

Figure 1. Contingency Framework

Trait Research

Many people believe that some people are born with the natural ability to lead. This conception that key traits are inherited led to the trait approach (Hoy & Miskel, 1996). Early in this century, leaders were regarded as those possessing qualities that differentiated them from those in general (Bass, 1990). Trait research focused around physical characteristics such as height and weight and personality factors, needs, values, task and interpersonal competence, intelligence, and charisma. Stogdill (cited in Hoy & Miskel, 1996) reviewed a number of trait studies and concluded that trait research by itself gave minimal and confusing results. Therefore, he added a situational factor to the thinking at that time. Yukl (cited in Hoy & Miskel, 1996) suggested that trait research focus more on traits versus leadership effectiveness and less on traits of leaders versus non-leaders. Progress has been made in understanding trait research with better research

designs that show how leader attributes are related to leadership behavior and effectiveness (Yukl, 2002).

Situation Research

In reaction to the numerous traits studies and lack-luster results, researchers sought to understand characteristics of the setting that could be attributed to the leader's success. Situational variables studied included subordinate characteristics, organization structural properties, leader role characteristics, internal environment, and external environment. John Campbell and his colleagues (cited in Hoy & Miskel, 1996) found that the jump from the thinking that traits make the leader to the thinking that situations make the leader was short-lived because the research base was minimal. It is suggested that to restrict the study of leadership to either traits or situations was too narrow of an approach and counterproductive. Generalizations made from situation research and the earlier trait research are that both leader traits and situation characteristics combine to influence a leader's behavior. This leader behavior is then related to leader effectiveness. Another generalization was that situational characteristics do impact effectiveness (Hoy & Miskel, 1996).

Leadership Behavior Research

Given these generalizations from the situational research era, leadership behavior was studied. Yukl (2002) indicates two subcategories of behavioral research. The first focuses on how managers typically spend their time and the patterns of what they actually do on the job such as activities, responsibilities, and functions. The second

subcategory deals with an attempt at identifying effective leadership behavior. Carthwright and Zander's (cited in Hoy & Miskel, 1996) two category breakdown was different than Yukl's. They report behavioral leadership research as goal achievement and group maintenance.

One of the first behavioral research studies was developed in the 1940s at Ohio State University by John K. Hemphill and Alvin Coons. They created the well known leader behavior description questionnaire (LBDQ) (Figure 2) to study leadership behavior at Ohio State University (Hoy & Miskel, 1996). To identify the leadership behaviors, the researchers compiled a list of approximately 1800 behaviors and then reduced the list to 150. Military and civilian personnel were questioned about the 150 items resulting in two broadly defined categories (Bass, 1990; Yukl, 2002). Initiating structure and consideration were the two behavioral categories discovered. The initiating structure category is when the leader defines and structures their own role and the roles of subordinates toward attainment of the group's formal goals. The consideration category is when the leader acts in a friendly and supportive manner, shows concern for subordinates and looks out for their welfare (Yukl, 2002).

		Consideration	
		Low	High
Initiating Structure	High	**Quadrant II** Low consideration High initiating structure	**Quadrant I** High consideration High initiating structure
	Low	**Quadrant III** Low consideration Low initiating structure	**Quadrant IV** High consideration Low initiating structure

Figure 2. Quadrants Formed from the LBDQ

Interpretation of this figure is as follows. Leaders high on both initiating structure and consideration are in quadrant I and are labeled as dynamic. Leaders who are low on both are in quadrant III and labeled as passive leaders. Those high in initiating structure and low on consideration are in quadrant II and labeled as designated structured leaders while those who are high in consideration and low on initiating structure are in quadrant IV and labeled as considerate leaders. It was thought that administrators who scored high on both categories would be effective but recent interpretation suggest that a match between these two behavioral categories may offer a more universal explanation (Hoy & Miskel, 1996; Yukl, 2002).

The managerial grid theory developed by Blake and Moulton used the situation concept in conjunction with the leader's behavior to describe leadership effectiveness. In the managerial grid model, people and production replace consideration and initiating structure respectively. The essence of their model is that the leader's behavior must be high in both people and production categories in order to be effective. They also recognize the need for a match between leader behavior and situation in order to be effective. For example, leaders who were high on both people and production may not be effective if there is not an appropriate match between those behaviors and the situation. Although not directly studied, it supported the need to understand how the situation affects leadership effectiveness (Hoy & Miskel, 1996).

Leadership Effectiveness

The contingency model ends with the concept of leadership effectiveness. Personal (the leader), organizational, and individual (the followers) are the three

dimensions used to explain leadership effectiveness. Human fulfillment and goal attainment are the underlying concepts that these the dimensions explain. Given these factors, there is opportunity for multiple explanations including contradictory conclusions to be formed (Hoy & Miskel, 1996).

Transformational Leadership

In the 1980s, researchers became interested in the emotional and symbolic aspects of leadership. This new leadership interest differed from the contingency model just described. Part of their quest was to find processes that influenced followers to make self-sacrifices for the attainment of the organizational goal. Theories such as charismatic and transformational leadership were tested and developed as this body of research grew (Hoy & Miskel, 1996). In particular, the transformational leadership theory was strongly influenced by James McGregor Burns and his 1978 political leadership research. He contrasted transformational leadership with, what he called, transactional leadership. Transactional leadership is a model whereby followers are motivated to action by inducing them with promises of rewards such as money or political appointments. Burns (cited in Bass, 1990) writes, ". . . transactional leaders approach followers with an eye to exchanging one thing for another: jobs for votes, or subsidies for campaign contributions. Such transactions comprise the bulk of the relationships among leaders and followers, especially in groups, legislatures, and parties" (p. 23). Conversely, the transformational leadership model is one in which followers are induced to action by appealing to their moral values in an attempt to raise

their consciousness about the work at hand thereby producing better products (Yukl, 2002). The transformational leader recognizes the follower's need but goes beyond this by seeking to satisfy higher needs, in terms of Maslow's need hierarchy, thereby engaging the full person. Burns notes that transformational leadership may result in followers being converted into leaders and leaders are converted into moral agents. The basis of transformational leaders are personal values and beliefs of leaders. Burns thought of these two models as opposite ends of a continuum whereas later work by Bass indicated that transformational leadership augments the behaviors of transactional leadership (Bass, 1985; Burns, 1978). Hoy and Miskel (1996) communicate that transformational leaders are expected to:

- Define the need for change.
- Create new visions and muster commitment to the visions.
- Concentrate on long-term goals.
- Inspire followers to transcend their own interest for higher-order goals.
- Change the organization to accommodate their vision rather than work within the existing one.
- Mentor followers to take greater responsibility for their own development and that of others. Followers become leaders and leaders become change agents, and ultimately transform the organization.

Bass (1985) found that subordinates evaluations of their respective military and industrial superiors created four factors or behaviors that described transformational leadership. These factors include:

- Idealized Influence (charismatic leadership),
- Inspirational motivation (leadership),
- intellectual stimulation, and
- individualized consideration (Hoy & Miskel, 1996; Yukl, 2002).

Transactional behaviors include the following factors:

- Contingent Reward
- Active Management by Exception
- Passive Management by Exception (Yukl, 2002).

Bass (cited in Hoy & Miskel, 1996) views transformational leadership as an extension of transactional leadership in that it goes beyond simple exchanges by employing one or more of the behavioral factors (the four Is).

The building of trust and respect in followers are the main concepts behind idealized influence behavior. Here, leaders are admired, respected and trusted. Avolio (cited in Hoy & Miskel, 1996) says, "Followers identify with their leaders and want to emulate them" (p. 394). Bass and Avolio (cited in Hoy & Miskel, 1996) found that this transformational behavior results from leaders behaving as role models. This behavior is echoed by Bainbridge and Thomas (2006) when they said in their discussions about whether a leader's values should be similar or dissimilar with followers that, "Those who argue for similar values say that leadership will be accepted when the leader is trusted and seen as the model for the group" (p. 2).

Transformational leaders use inspirational motivation behaviors when they inspire the followers to believe that the organization's problems can be solved. Vision development and communication is a big issue in this category. Motivation comes when

the leader provides challenge and meaning to the work (Hoy & Miskel, 1996). Sergiovanni (2001) said it this way, “When teachers find their practice to be meaningful, teaching not only takes on special significance, but also provides teachers with feelings of intrinsic satisfaction” (p. 118).

Intellectual stimulation captures creative and innovative qualities of leaders. Leaders analyze why things are done a certain way and how to approach problems uniquely. The issue of change is explained in this category. Bass (1990) says, “Leaders are agents of change—persons whose acts affect other people more than other people’s acts affect them” (p. 20).

Attwater and Bass (cited in Hoy & Miskel, 1996) in communicating about individualized consideration mention that a leader expresses this quality when they pay attention to others’ needs for achievement and growth. A leader, in knowing these things, can help followers to develop to successfully higher levels of potential. Leaders operating in this category actively and effectively listen to others. Dyer (2006) summed it up this way when she said, “Exemplary leadership requires practicing attentive and active listening, not selective listening for key points, even with those who tend to waste a lot of time” (p. 97).

Posner and Kouzes (cited in Bass, 1990) interviewed ordinary people and categorized their findings in five behaviors that are similar to Bass’s research. In Kouzes and Posner’s findings, transformational leaders *challenge the process, inspire a shared vision, enable others to act, model the way,* and *encourage the heart* (Bass, 1990). Hoy and Miskel (1996) indicate that transformational leadership is close to what people have in mind when they think about leadership in general.

The multifactor leadership questionnaire (MLQ) has been a common instrument to research transformational leadership. Even through its various revisions, there is some criticism about the MLQ in that it does not effectively capture transformational leadership qualities. The LBDQ, from the contingency model, has also been used and results indicate that high initiating structure and consideration are closely related to transformational behaviors assessed by the MLQ. Kouzes and Posner (2002) created a different survey called the Leadership Practices Inventory (LPI) to assess transformation leadership through those five behaviors (called practices). Using this survey, Posner and Kouzes (cited in Bass, 1990) found that transformational leadership is highly connected to quality communication variables such as being frank, open and two way communication, and being a careful listener. Bass (1990) suggests that effective communication styles like those variables Posner and Kouzes studied are important to leadership effectiveness.

Model the Way

Kouzes and Posner's (2002) suggested that leadership is something that is done and therefore all of their five categories of leadership start with a verb. The first category they write about is how leaders *model the way* in that they match their behaviors with their words and beliefs. Alan Keith (cited in Kouzes and Posner, 2002) says, "You must lead from what you believe" (p. 14). This sentiment of being an example to what you expect your followers to do was also echoed in a statement by Gayle Hamilton (cited in Kouzes and Posner, 2002), a director with Pacific Gas &

Electric Company when she said, “I would never ask anyone to do anything I was unwilling to do first” (p. 14).

Inspire a Shared Vision

Leaders are charged with creating a compelling preferred future by inspiring a shared vision. Leaders see pictures in their minds of what the organization will look like prior to starting projects and actions (Kouzes and Posner, 2002). It is noted that when followers clearly know where they are going, qualities such as passion and enthusiasm are elevated to the point of changing behaviors toward the end at hand. Yukl (2002) indicates that people will support radical changes if the vision of the future is better and attractive to the point of even enduring hardships and sacrifices along the way. Deal and Peterson (2000), write, “Developing a shared vision for the school can motivate students, staff, and community alike. It is not simply for the leader; it is for the common good” (p. 205).

Challenge the Process

Another leadership behavioral category revealed in Kouzes and Posner’s (2002) work was that leaders would challenge the organizational processes in operation. They mention that leaders have a desire to make something happen or change the way things are. Leaders were willing to analyze and initiate systems that would lead to new outcomes. In order to do this, they found that leaders listened to a variety of people such as customers, clients, vendors, people doing the work, etc. Changing a process also involves the potential risk of failure. Leaders are those who press on in that face of that

reality. As Bennis (cited in Kouzes and Posner, 2002) writes, ". . . leaders learn by leading, and they learn best by leading in the face of obstacles" (p. 16).

Enable Others to Act

This leadership principle involves the reality that in order to get something great done, it will take more than one person to do it. This leadership quality became apparent to the researchers as they started hearing the word "we" more times in great leaders than the work "I." Hoyle (2002) takes it a step more suggesting that leaders ought to find joy in the success of others thereby empowering with love. Leaders are those who engage all those who must make the project work and live with the results. The cases analyzed reveal that leaders proudly discussed teamwork, trust, and empowerment. Getting others on board was an essential quality reported. (Kouzes and Posner, 2002)

Encourage the Heart

This quality deals with the human effect as one or a group journey toward their goals. As the trip to the top may become difficult, researchers report that leaders encourage the heart of their followers to carry on. Genuine acts of kindness and caring were described as ways that people appreciated. They also mention the problems with fake or disingenuous behaviors. People will turn away in disgust when the ceremonies do not mean anything. Part of the leader's job, in addition to showing people appreciation, is to create a culture of celebration. It is noted that when these things are done with authenticity and from the heart, they build a strong sense of collective identity and group spirit that is sustainable in the tough times of the journey toward the goal

(Kouzes and Posner, 2002). Evans (2000) in talking about the importance of authenticity writes, “Leaders who are followed are authentic; that is, they are distinguished not by their techniques or styles but by their integrity and their savvy” (p. 288).

Kouzes and Posner (2002) also offer another leadership shaping piece outside the five practices described above. In all their interviews, there appears to be a quality that was woven through the five emerging practices: leadership is a relationship. They report that leadership is a relationship between the leader and those who follow. Kouzes and Posner (2002) sum it up this way:

> We’re even more convinced of this [relationship piece] today than we were twenty years ago. Success in leading will be wholly dependent upon the capacity to build and sustain those human relationships that enable people to get extraordinary things done on a regular basis. (p. 21)

Summary

The overview of literature makes it clear that there is a need for continued research in the constructs of collective efficacy, especially as it relates to the increasing pressures for schools to produce every increasing student results. As the NCLB requirements ratchet up each year in conjunction with the Texas accountability expectations, understanding effective school practices is paramount. Collective efficacy school research showed promising results in that it is a concept that can be influenced by the four known factors and perhaps other leadership factors sought in this study.

Leadership research is attractive and its knowledge base is continually growing. As principals in their respective schools exemplify leadership practices to ensure their schools are performing, they are constantly seeking knowledge as to programs or practices that work. In the age of accountability, these things are crucial. Kenneth Leithwood (2001) clearly communicates this aspect when he encourages school leaders to stay abreast of the best professional practices and to assist staff in the identification of professional standards for their work. He further states:

> Among the more important school leadership practices associated with a professional approach to accountability, therefore, would seem to be those which foster the collective capacities identified in recent research about 'professional learning communities,' 'organizational learning' in schools, and 'collective teacher efficacy.' Many of these are transformational leadership practices. (p. 225)

Leadership and collective efficacy are two promising concepts that have a small but growing research base. As future knowledge is developed, revealed, and practiced regarding these two concepts, student performance is likely to improve. School leaders are certainly under that expectation by the federal and state governments, and local school boards to ensure that student learning is taking place on their campus.

CHAPTER III

METHODOLOGY

Introduction

The purpose of this study is to investigate the possible connections between leadership behavior and collective efficacy levels in selected public schools in the Katy Independent School District in Texas.

Data were collected using two instruments to determine the collective efficacy and leadership effectiveness levels of schools. The study was also designed to obtain demographic data on participants to compare demographic qualities of participating schools with respect to collective efficacy and leadership effectiveness levels. Gall et al. (1996) indicate that questionnaires and interviews are used extensively in educational research to collect information that is not easily or directly observable. Furthermore, they indicate that a wide range of educational problems can be investigated using questionnaires and interviews. This study used two questionnaires to collect data. The Leadership Practices Inventory (LPI-Observer) was used to gather leadership effectiveness data and the collective efficacy short form was used to collect data on campus efficacy.

This study investigated two research hypothesis:

1. What are the connections between leadership effectiveness and collective efficacy as perceived by teachers at selected public schools in the Katy Independent School District?
2. What are the connections between leadership effectiveness and collective efficacy as perceived by teachers at selected public schools in the Katy Independent School District?

This chapter is communicated in four sections:

1. Population
2. Instrumentation
3. Data Collection Procedures
4. Data Analysis

Population

The population for this study is all the public school principals, except the Miller Career Center and the Opportunity Awareness Center (OAC) principals in the Katy Independent School. Based on sampling techniques for relational studies, surveying 30 to 45 cases will be sought (Gall et al., 1996). The administration of the survey instruments will occur through online surveying methods through the use of e-mail as agreed upon by the principal to their respective staffs in the spring of 2006.

Instrumentation

Two instruments will be used to collect data for this study. The Leadership Practices Inventory (LPI-Observer) developed by Kouzes and Posner (2002) is the instrument that will assess the leadership behavior of the principal. Internal reliability for the LPI, as measured by Cronbach's Alpha, is strong with all scales (the five leadership behaviors from both the self and others forms) above the .75 level. The subjectively measuring validity through face validity was also strong. Other more objective measures of validity indicate acceptable levels (Kouzes & Posner, 2002).

The collective efficacy short form instrument as developed by Goddard will assess a campuses' collective efficacy. Only teachers will complete this instrument. Goddard (2001) developed the 12-item collective efficacy short form instrument from an original 21-item collective efficacy instrument. The original longer form has high internal reliability (alpha = .96) and is valid as compared to personal teacher efficacy, trust in colleagues, and environmental press (Goddard, 2001). The 12-item short form has high internal consistency (alpha = .94). By eliminating nine items, the two instruments remained highly correlated (r = .983) suggesting that little change resulted from the item omission (Goddard, 2002a).

Data Collection

Permission and support from the superintendent or designee as well as the principals was sought prior to undertaking this study. Teachers completed survey instruments both on the campus' collective efficacy and principal's leadership

effectiveness. The researcher created an online survey site so that participants are able to access these instruments from their computer. Half of the teachers on a campus with last names starting with the letter A through M were directed to the collective efficacy site and last names starting with N through Z were directed to the LPI site. Once they completed the survey online, they submitted the results that were sent to a spread sheet only accessible by the researcher. The surveys were done anonymously and campuses were also kept anonymous. The anonymity was established by an electronic coding mechanism so as to correctly correlate collective efficacy to leadership effectiveness. The campus principal sent an email to their respective staff that the researcher designed that contained all necessary statements and the two hot links they could select if a teacher chose to participate. By clicking the hot links, they were directed to an out of district website at Texas A&M that contained the online surveys. Participants would then be directed through the information page and subsequent survey. After completing the survey, they were asked six demographic questions as partially outlined in the Academic Excellence Indicator System (AEIS) of the Texas accountability system and one open ended question pertaining to their respective survey.

Data Analysis

Quantitative data was obtained using basic questionnaire techniques outlined in Educational Research: An Introduction (Gall et al., 1996) and analyzed through the use of the Statistical Package for Social Studies (SPSS) and Microsoft Excel computer software. Correlational studies with two continuous variables allow for product-moment

correlation (Pearson r) calculation to be reasonably employed as well as coefficients of determinations (r^2). Other statistical calculations such as ANOVAs, Levene tests, Welch, Brown Forsythe robust tests, contrast tests, and post hoc Tamhane tests may be incorporated to generate other forms of analysis. The data from the instruments will include levels of collective efficacy and leadership effectiveness.

Qualitative observations of teacher comments and teacher demographic data will also be incorporated in the analysis. Erlandson et al. (1993) suggest that data be analyzed by methods of triangulation, the development of working hypotheses, and the testing of working hypotheses in an attempt to keep the conclusions more trustworthy. Results of the study will be reported using numerical and graphic techniques to report descriptive statistics. Multiple displays such as tables, charts, and graphs will be used to present findings.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

The purpose of this research was to investigate leadership effectiveness and collective efficacy and to determine if there was a relationship between these two variables as perceived by teachers in the Katy Independent School District. Current accountability practices from both the state and federal level compel principals to use practices geared toward ensuring student success on state mandated assessments. Collective efficacy research has revealed a positive relationship with student success and discovering ways to create or sustain high levels of collective efficacy may prove promising to principals in the field.

Procedures and Presentation

Survey instruments were emailed to all principals except three in the Katy Independent School District (N=41). The researcher did not participate in the study nor did two special high school campuses. The two special high school campuses were the district's discipline alternative educational program and the career education school. Eighteen campuses originally participated in the study. After one week, the researcher sent out a reminder email to all campuses. Four more campuses joined the study

bringing the total to 22 campus participants. Gall et al. (1996) suggest that 30 participants be used as a minimum in correlation research.

Leadership Practices Inventory (LPI)

Two research instruments were used in this research for leadership effectiveness and collective efficacy. The Leadership Practices Inventory (LPI-Observer) was the survey developed by Kouzes and Posner (2003) and contains 30 statements divided into five practices of six questions each. The five practices are: Model the Way, Inspire a Shared Vision, Challenge the Process, Enable Others to Act, and Encourage the Heart. The six questions for each practice have a sensitive 10 point Likert scale. The values for each of the 10 points are as follows: (1) almost never, (2) rarely, (3) seldom, (4) once in a while, (5) occasionally, (6) sometimes, (7) fairly often, (8) usually, (9) very frequently, and (10) almost always. Six is the minimum score for each practice and 60 is the maximum. The overall LPI scores range between a low score of 30 to a high score of 300 and is determined by adding up each of the five individual practices.

There were demographic questions at the end of the LPI survey developed by this researcher. One of the questions was an open ended response which participants could write in their answers. The other six demographic questions asked about race, gender, and length of teaching experience.

Questions that comprise each of the five practices on the LPI survey instrument are grouped as shown in Table 1.

Table 1.–Leadership Practices and Corresponding LPI Statement

Leadership Practice	LPI Statement
Challenge the Process	1, 6, 11, 16, 21, 26
Inspiring a Shared Vision	2, 7, 12, 17, 22, 27
Enabling Others to Act	3, 8, 13, 18, 23, 28
Modeling the Way	4, 9, 14, 19, 24, 29
Encouraging the Heart	5, 10, 15, 20, 25, 30

Table 2 indicates the nature of all the participants over all campuses on the LPI survey.

Table 2.–Demographics of LPI Participants

Gender	Frequency	Percentage
Male	17	13.6%
Female	118	87.4%
Beginning Teacher	3	2.22%
1-5 Years Experience	28	20.7%
6-10 Years Experience	43	31.9%
11-20 Years Experience	33	24.4%
Over 20 Years Experience	28	20.7%

Collective Efficacy Survey

The collective efficacy survey short form was administered to gather collective efficacy data per campus. This survey has twelve questions of which six are negatively written and the remaining six are positively written. Each question has a six point Likert scale that ranges from Strongly Disagree as 1 to Strongly Agree as 6. The collective efficacy survey renders only one score with a range from 12 to 72.

Collective efficacy survey instruments had the same six demographic questions as the LPI survey attached to the end of the instrument and one open ended question.

Table 3 indicates the nature of all the participants over all campuses on the Collective Efficacy survey.

Table 3.–Demographics of Participants on the Collective Efficacy Survey

Gender	Frequency	Percentage
Male	43	13.1%
Female	285	86.9%
Beginning Teacher	15	4.6%
1-5 Years Experience	71	21.6%
6-10 Years Experience	79	24.1%
11-20 Years Experience	93	28.4%
Over 20 Years Experience	68	20.1%

Table 4 indicates the total number of participants for the two surveys and number of schools participating. Between the twenty two schools, 135 participants answered the LPI and 328 participants answered the collective efficacy survey.

Table 4.–Total Number of Participants and Schools

Participants	Frequency
LPI	135*****
CE	328*****
Schools	22

* indicates the number of participants over all 22 schools.

Results of Related Research Questions

The purpose of this research was to investigate the connections between leadership effectiveness and collective efficacy as perceived by teachers in the Katy Independent School District. This research also sought to describe any characteristics in the schools that might explain the connections.

Analysis of Research Question #1

What are the connections between leadership effectiveness and collective efficacy as perceived by teachers at selected public schools in the Katy Independent School District?

School principals sent out an email to their entire staff alerting them to this research opportunity. Half of the staff members were asked to click on a hot link button that would take them to the LPI online survey. This survey asked 30 questions with an additional set of 6 demographic questions and one open ended question. The data were compiled and statistical analyses were performed.

The first correlation was between the overall LPI score (the combination of all 5 practices) and the collective efficacy score. Using the Pearson product moment correlation coefficient formula,

$$r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 \sum (y - \bar{y})^2}},$$

the correlation of the overall LPI score on collective efficacy was 0.46 (Hinkle et al., 1998). Figure 3 shows a graphical representation of this value.

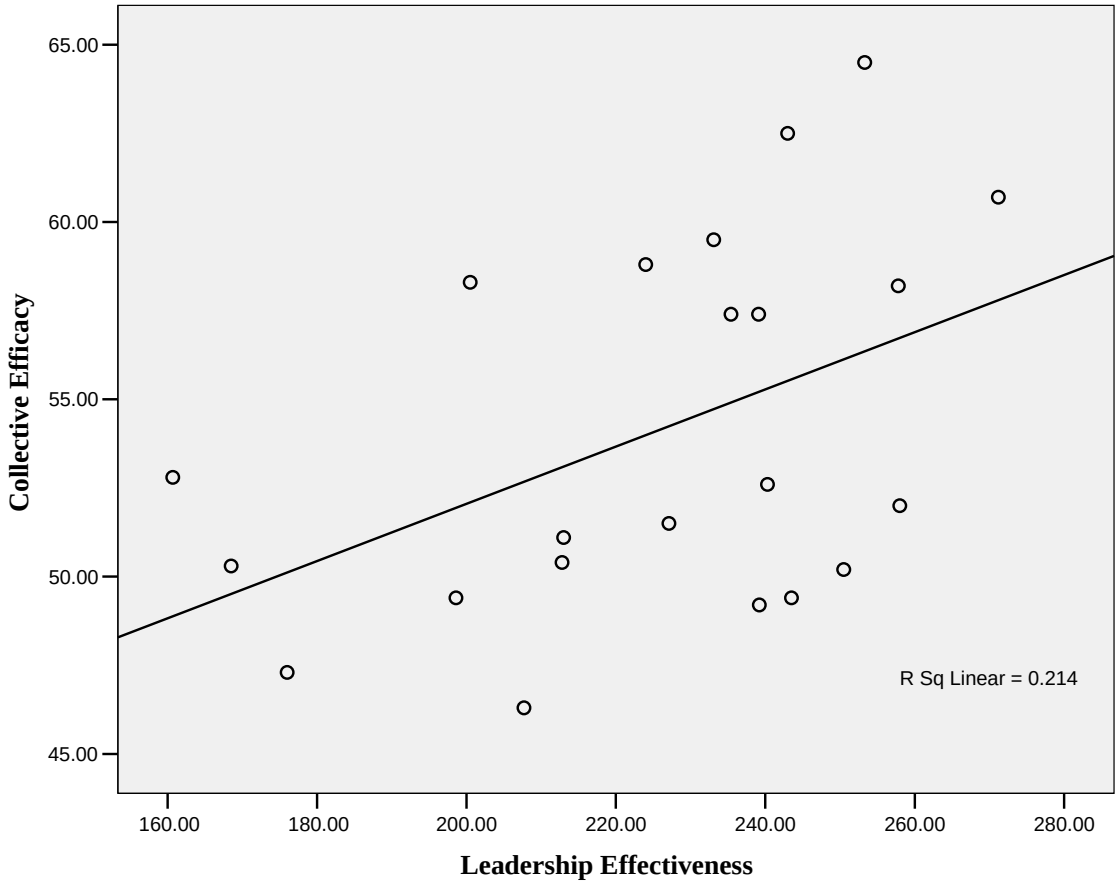

Figure 3. Correlation of Overall Leadership Effectiveness on Collective Efficacy

Squaring Pearson's r value creates the coefficient of determination, r2, value. The r2 value indicates the proportion of variance that two variables in a bivariate distribution have in common (Hinkle et al., 1998). The coefficient of determination of this correlation is 0.21. Therefore, approximately 21 percent of the variance in overall leadership effectiveness will explain the collective efficacy variance.

Table 5 shows the ranges of correlations and their relative strengths.

Table 5.–Interpretation of the Size of a Correlation Coefficient (*r*)

Size of Correlation (*r*)	Interpretation
.90 to 1.00 (-.90 to -1.00)	Very high positive (negative) correlation
.70 to .90 (-.70 to -.90)	High positive (negative) correlation
.50 to .70 (-.50 to -.70)	Moderate positive (negative) correlation
.30 to .50 (-.30 to -.50)	Low positive (negative) correlation
.00 to .30 (.00 to -.30)	Little if any correlation

(Gall et al., 1996)

The researcher modified the data pool by taking out cases where there were two or fewer teacher participants. Figure 4 shows the result of this with the addition of reference lines at 220 for overall leadership effectiveness and 55 on the collective efficacy variable. Nineteen schools remain in the data pool for analysis. These reference lines create an artificial high and low quadrants for both overall leadership effectiveness and collective efficacy. There are six schools in the low collective efficacy and low leadership quadrant, six in the low collective efficacy and high leadership quadrant, and seven schools in the high collective efficacy and high leadership quadrant. There are no schools in the high collective efficacy and low leadership quadrant.

This modified data pool changed the correlations and coefficient of determinations. The correlation of overall leadership effectiveness on collective efficacy is 0.52 and the r^2 is 0.27 which means that overall leadership effectiveness has a moderate positive correlation on collective efficacy and that approximately 27% of the variance in overall leadership effectiveness can explain the variance in collective efficacy.

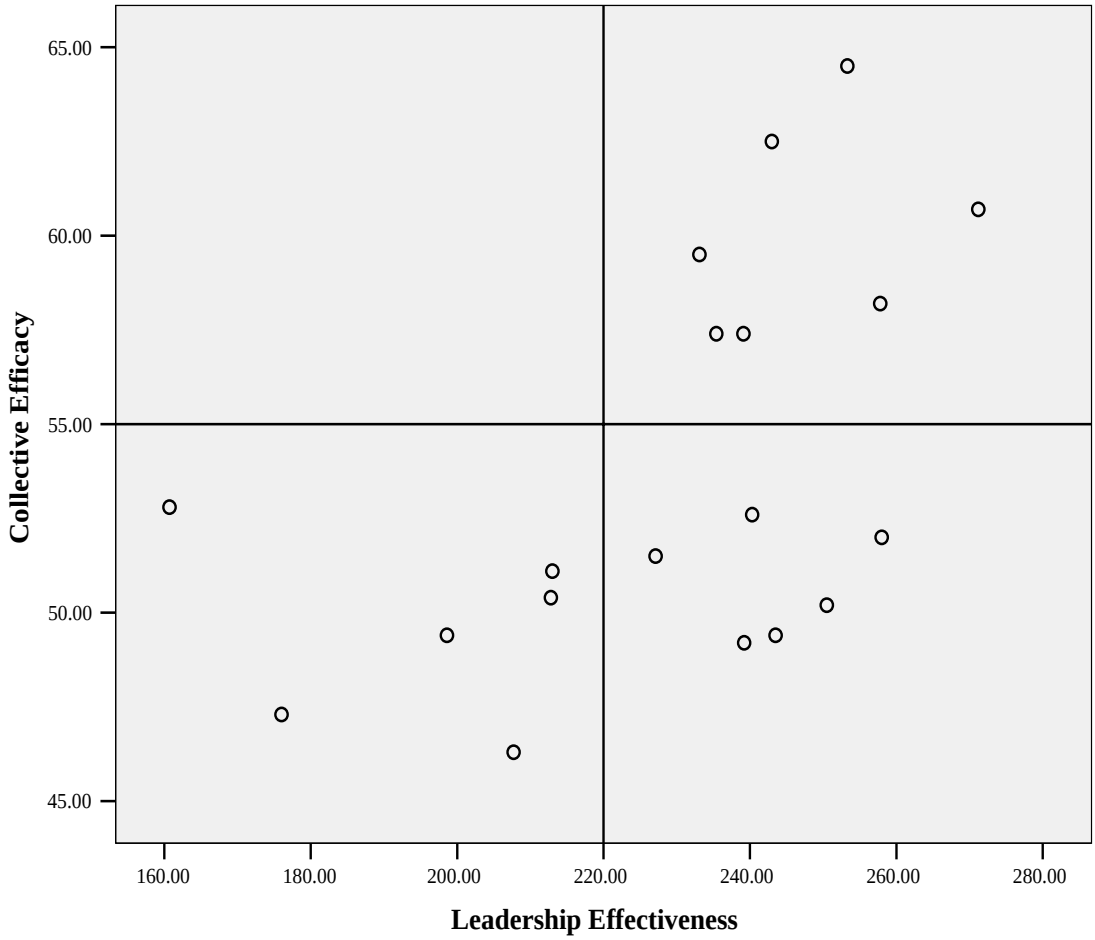

Figure 4. Correlations of Overall Leadership Effectiveness (Modified)

Analysis of Each Leadership Practice

By separating out each of the five practices, the researcher calculated and observed the amount of correlation that each practice had on collective efficacy. Table 6 shows the correlation value, the coefficient of determination value and indicates the strength of each correlation using both the original 22 school data pool and the modified 19 school data pool by using Table 5. After taking out the three schools, the correlations and coefficients of determinations all got stronger. Both correlations in the *model the*

way and *challenge the process* practices moved to a moderate positive strength up from the low correlation using the original data pool.

Table 6.–Pearson's *r* and Coefficient of Determinations (r^2) on Collective Efficacy

		Overall Leadership Effectiveness	Model the Way	Inspire a Shared Vision	Challenge the Process	Enable Others to Act	Encourage the Heart
r	Original data pool	.46 Low	.44 Low	.36 Low	.48 Low	.44 Low	.41 Low
	Modified data pool	.52 Moderate	.52 Moderate	.43 Low	.53 Moderate	.46 Low	.46 Low
r^2	Original data pool	.21	.18	.13	.24	.20	.17
	Modified data pool	.27	.27	.19	.29	.22	.21

Kouzes and Posner (2003) indicate the raw number breaks at 30th and 70th percentiles of each practice from a sample of 17,908 participants. Table 7 shows these break points for the low, middle, and high score ranges.

Table 7.–Leadership Practices Inventory (LPI) Percentile Rankings

Leadership Practice	Low score range (1%-29%)	Middle score range (30%-69%)	Upper score range (70%-100%)
Modeling the Way	16 – 43	44 – 50	51 – 60
Inspiring a Shared Vision	18 – 39	40 – 49	50 – 60
Challenge the Process	24 – 42	43 – 49	50 – 60
Enabling Others to Act	24 – 46	47 – 52	53 – 60
Encouraging the Heart	22 – 42	43 – 51	52 – 60

Analysis was completed to determine which of the three score ranges each of the twenty two schools individual leadership practice score fell. These groups were used for further analysis. Table 8 shows the number of schools in each score range of each leadership practice.

Table 8.–Number of Schools in Each LPI Score Range

Leadership Practice	Low score range (1%-29%)	Middle score range (30%-69%)	Upper score range (70%-100%)
Modeling the Way	6	14	2
Inspiring a Shared Vision	4	14	4
Challenge the Process	7	11	4
Enabling Others to Act	5	11	6
Encouraging the Heart	6	12	4

Model the Way Practice

In understanding the *model the way* practice, Kouzes and Posner (2002) communicate that it is important for leaders to find their own voice otherwise they will only use words and thoughts that are not personalized and are nothing like the leader who is speaking them. In this vein, these authors suggests four essentials: clarify your values, express your self, build and affirm shared values, and align actions with values (p. 45). Figure 5 graphically shows the correlation of the *model the way* practice on collective efficacy.

The correlation above shows low positive correlation of 0.44 and a coefficient of determination of 0.183.

Figure 6 shows each groups mean with whiskers extending plus and minus two standard or errors. Groups one and two over lap and groups two and three overlap but it appears that groups one and three do not have an overlap of whiskers.

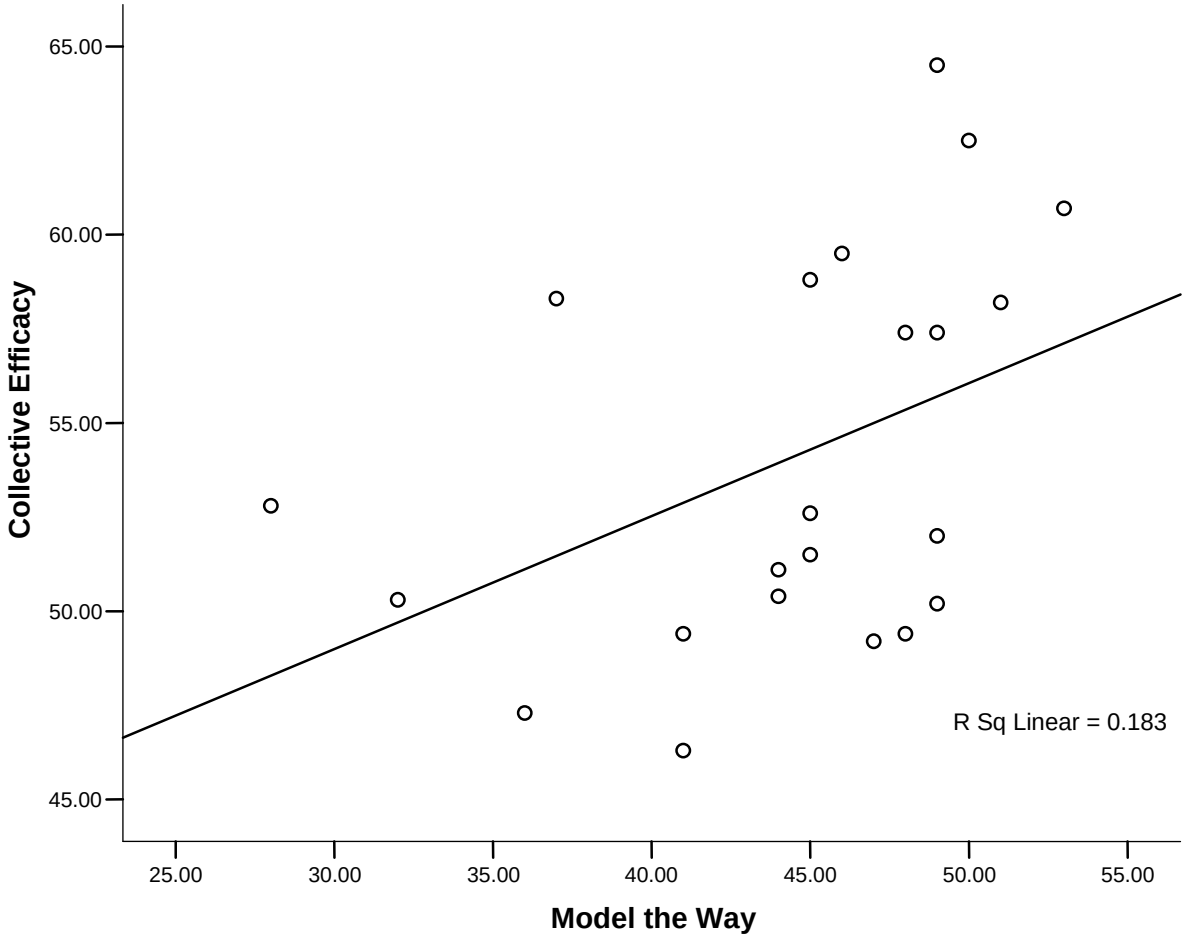

Figure 5. Correlation of the Model the Way Practice on Collective Efficacy

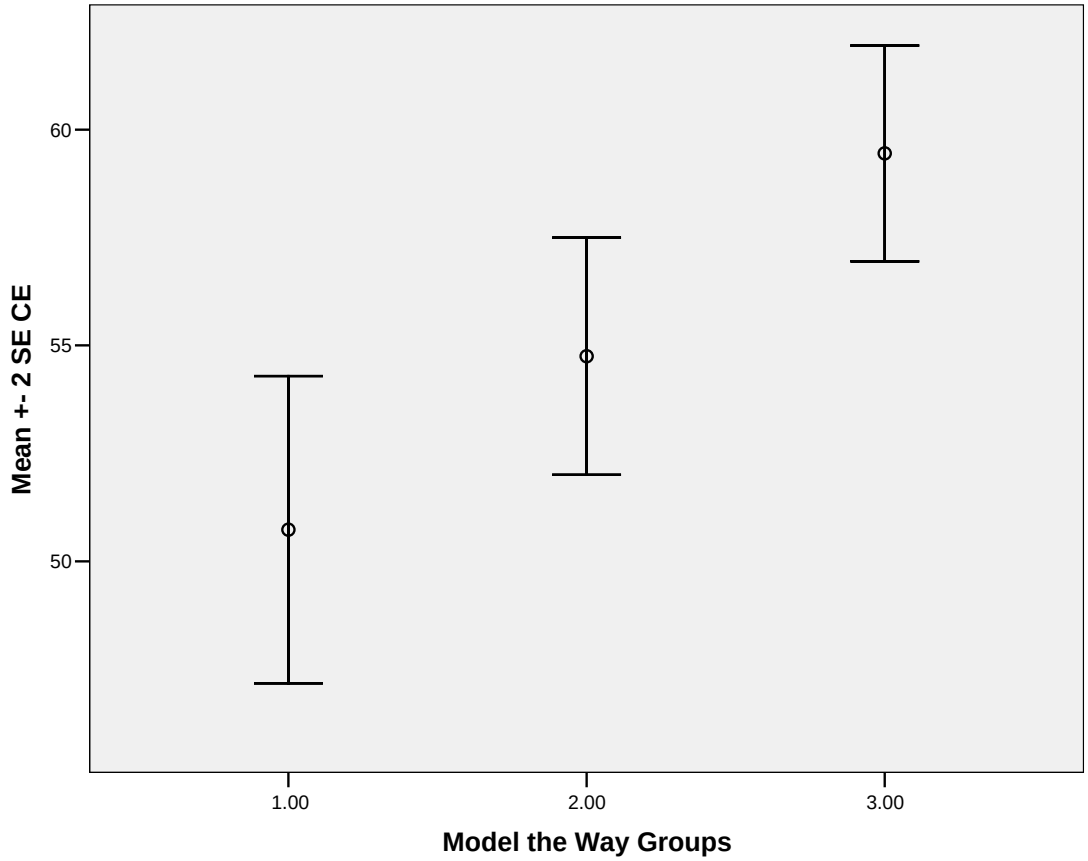

Figure 6. Box Plots of the Three Groups of the Model the Way Practice on Collective Efficacy

The descriptive statistics indicated for the *model the way* groups do use the collective efficacy score as the dependent variable. Group 1 is the low score range group and its respective collective efficacy average is also the lowest. Group's 2 and 3 show a 54.75 and 59.45 collective efficacy mean respectively (Table 9).

The Levene test shows no statistical significant difference in the variances of the three groups in the *model the way* practice. Therefore, each group will assume an equal variance in further analysis (Table 10).

Table 9.–Descriptive Statistics the Model the Way Groups

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1.00	6	50.7333	4.35737	1.77889	46.1606	55.3061	46.30	58.30
2.00	14	54.7500	5.13850	1.37332	51.7831	57.7169	49.20	64.50
3.00	2	59.4500	1.76777	1.25000	43.5672	75.3328	58.20	60.70
Total	22	54.0818	5.22117	1.11316	51.7669	56.3968	46.30	64.50

Table 10.–Levene Test for the Homogeneity of Variances of the Model the Way Groups

Levene Statistic	df1	df2	Sig.
2.311	2	19	.126

The ANOVA for the *model the way* groups shows no statistical significant differences between these three groups (Table 11). However, the Welch and Brown-Forsythe robust test do show that there is a statistical significant difference between these three groups (Table 12). The Welch and the Brown-Forsythe tests take into account differences in cases numbers per group more effectively than an ANOVA. The Welch and Brown-Forsythe test showed a 0.025 significance result which is above the 0.05 confidence level for significance.

Table 11.–ANOVA of the Model the Way Groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	131.159	2	65.580	2.823	.084
Within Groups	441.313	19	23.227		
Total	572.473	21			

Table 12.–Robust Tests of Equality of Means of the Model the Way Groups

	Statistic(a)	df1	df2	Sig.
Welch	7.679	2	5.555	.025
Brown-Forsythe	4.996	2	12.930	.025

a Asymptotically F distributed.

Given that both robust test showed a statistical significant difference and that variances are assumed equal by the Levene test, the researcher employed the Tamhane post-hoc test to determine which of the three groups were different (Table 13). The low group (below 30th percentile) and the high group (above 70th percentile) have collective efficacy means that are statistically significantly different. Tamhane test showed significance at the 0.03 level which is below the 0.05 level of expected statistical significance.

Table 13.–Tamhane Post-Hoc Test of the Model the Way Groups

(I) MTWgroups	(J) MTWgroups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	-4.01667	2.24732	.273	-10.3128	2.2794
	3.00	-8.71667(*)	2.17415	.030	-16.3471	-1.0862
2.00	1.00	4.01667	2.24732	.273	-2.2794	10.3128
	3.00	-4.70000	1.85702	.168	-11.6608	2.2608
3.00	1.00	8.71667(*)	2.17415	.030	1.0862	16.3471
	2.00	4.70000	1.85702	.168	-2.2608	11.6608

* The mean difference is significant at the .05 level.

The Levene test did not indicate a difference in variances and the contrast test shows both an assumed and non-assumed equal variance result (Table 14). Contrast test two (Table 15) was a test between the low and high group collective efficacy means and this contrast shows significance at the 0.039 assuming equal variances. This same contrast showed a significant difference not assuming equal variances at 0.01 even though this assumption is not reasonably indicated by the Levene test.

Table 14.–Contrast Coefficients of the Model the Way Groups

	MTW groups		
Contrast	1.00	2.00	3.00
1	-1	1	0
2	-1	0	1
3	0	-1	1

Table 15.–Contrast Tests of the Model the Way Groups

		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
CE	Assume equal variances	1	4.0167	2.35165	1.708	19	.104
		2	8.7167	3.93506	2.215	19	.039
		3	4.7000	3.64316	1.290	19	.213
	Does not assume equal variances	1	4.0167	2.24732	1.787	11.205	.101
		2	8.7167	2.17415	4.009	5.028	.010
		3	4.7000	1.85702	2.531	4.380	.059

Inspire a Shared Vision Practice

Kouzes and Posner (2002) suggest that inspiring a shared vision entails four different tasks. The first thing a leader should do is to develop a shared sense of destiny followed by listening deeply to others. Leaders should also discover and appeal to a common purpose. By doing these things, he or she is able to give life to a vision (p. 143).

The *inspire a shared vision* practice correlation on collective efficacy is 0.36 (low) with a coefficient of determination of 0.133 (Figure 7).

This box plot (Figure 8) graphically shows that the middle group has the lowest collective efficacy mean of the three groups. All three groups have whiskers that overlap each other and therefore, do not appear to be distinguishable.

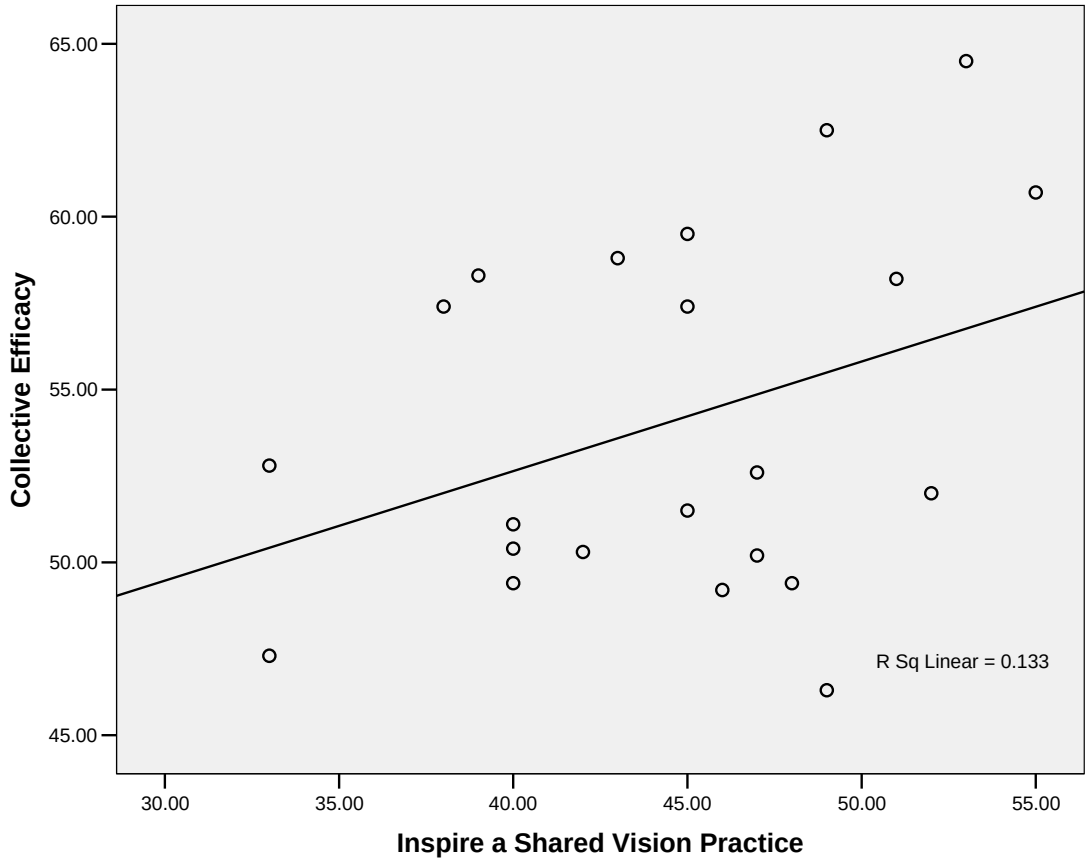

Figure 7. Correlation of the Inspire a Shared Vision on Collective Efficacy

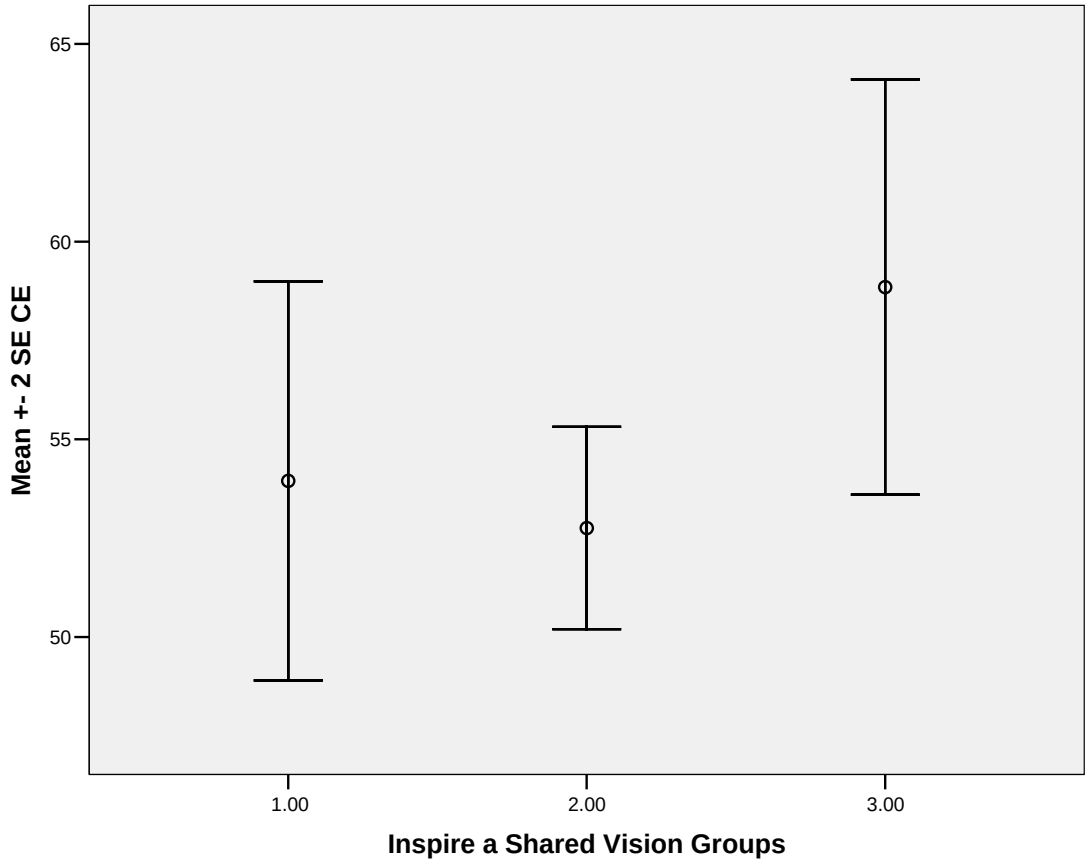

Figure 8. Box Plots of the Inspire a Shared Vision Practice Groups

The descriptive statistics table (Table 16) indicates that the lowest collective efficacy mean is group two at 52.75. Group one has a collective efficacy mean of 53.95 and the highest collective efficacy mean is group three at 58.85.

The Levene test did not show significance for homogeneity of variances (Table 17); therefore, variances will be assumed as equal for the *inspire a shared vision* practice groups.

Table 16.–Descriptive Statistics of the Inspire a Shared Vision Practice Groups

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1.00	4	53.9500	5.04546	2.52273	45.9215	61.9785	47.30	58.30
2.00	14	52.7571	4.78647	1.27924	49.9935	55.5208	46.30	62.50
3.00	4	58.8500	5.25008	2.62504	50.4960	67.2040	52.00	64.50
Total	22	54.0818	5.22117	1.11316	51.7669	56.3968	46.30	64.50

Table 17.–Levene Test of Homogeneity of Variances

.005	2	19	.995

The ANOVA for these three groups was 0.117 which is not statistically significant at the 0.05 level (Table 18). The Welch and Brown-Forsythe robusts test will be completed since there are different numbers of cases in each of the three groups.

Table 18.–ANOVA of the Inspire a Shared Vision Practice Groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	115.578	2	57.789	2.403	.117
Within Groups	456.894	19	24.047		
Total	572.473	21			

The Brown test was 0.228 and the Welch-Forsythe test was 0.167 which are above the 0.05 statistical significance level. Therefore, these tests did not indicate a statistically significant difference between these three groups (Table 19).

Table 19.–Robust Tests of the Inspire a Shared Vision Practice Groups

	Statistic(a)	df1	df2	Sig.
Welch	1.947	2	5.641	.228
Brown-Forsythe	2.235	2	8.370	.167

Challenge the Process

Kouzes and Posner (2002) write that as leaders search for opportunities to get extraordinary things done, they must use four essential concepts: seize the initiative, make challenge meaningful, innovate and create, and look outward for fresh ideas. In short, they communicate that leaders search for opportunities for ways to do what has not ever been done.

The *challenge the process* correlation on collective efficacy is 0.48 which is the highest correlation of all the practices (Figure 9). The coefficient of determination is 0.24.

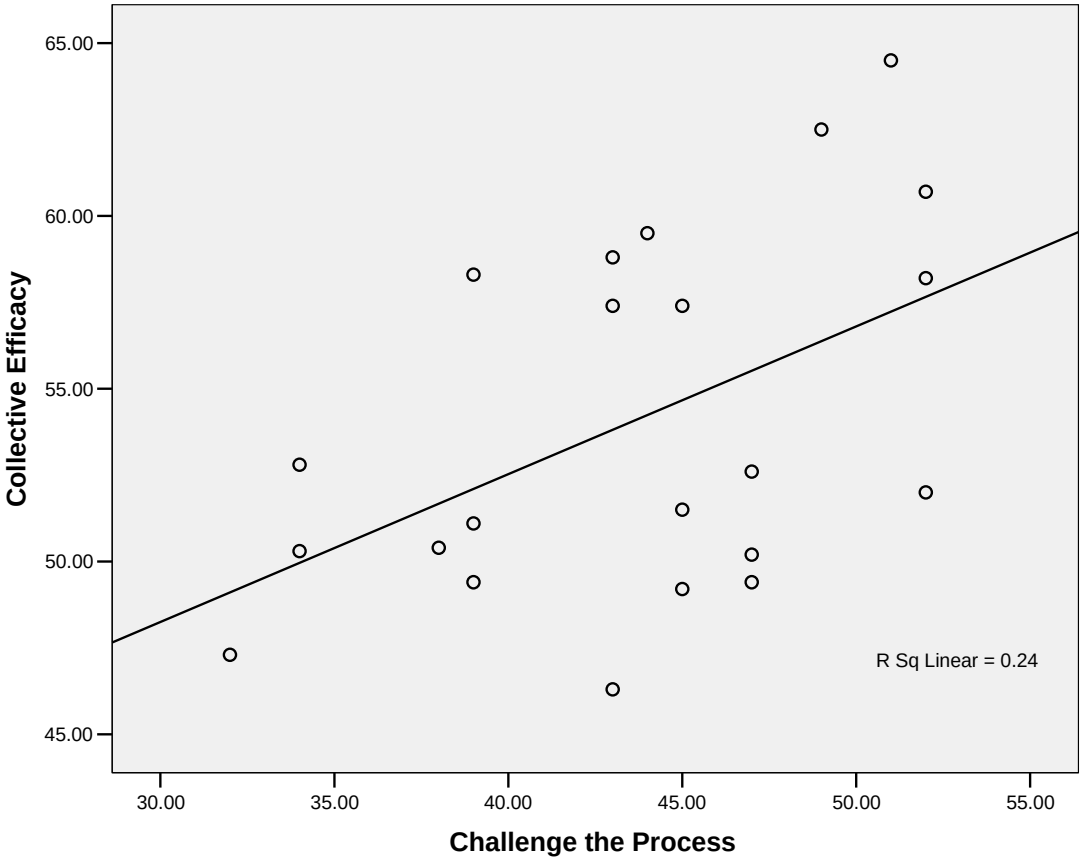

Figure 9. Correlation of the Challenge the Process Practice on Collective Efficacy

The box plots for the *challenge the process* variable show and increasing collective efficacy mean for the low, middle, and upper groups. Figure 10 also shows a larger variance for group three compared to the other groups.

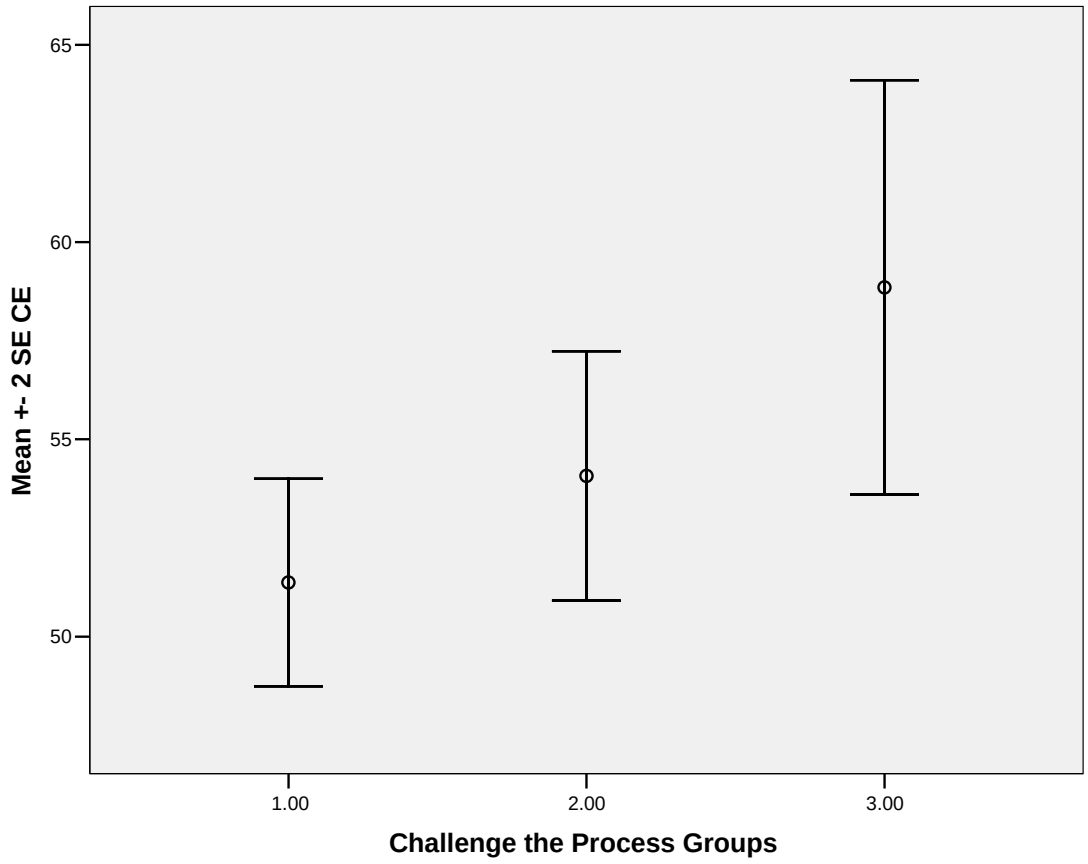

Figure 10. Box Plots of the Challenge the Process Groups

The descriptive statistics for the *challenge the process* practice also confirm the box plot figure regarding the respective means of the three groups. Groups one's mean is 51.37, group two is 54.07 and group three's collective efficacy mean is 58.85. Table 20 also reveals that these three groups have different numbers of contributing cases which will result in the Welch and Brown-Forsythe test being employed.

Table 20.–Descriptive Statistics of the Challenge the Process Groups

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1.00	7	51.3714	3.48028	1.31542	48.1527	54.5902	47.30	58.30
2.00	11	54.0727	5.24158	1.58040	50.5514	57.5941	46.30	62.50
3.00	4	58.8500	5.25008	2.62504	50.4960	67.2040	52.00	64.50
Total	22	54.0818	5.22117	1.11316	51.7669	56.3968	46.30	64.50

The Levene test is 0.174 which is not statistically significant at the 0.05 level. The variances between these three groups are considered homogenous (Table 21).

The ANOVA for this practice is 0.066 which is close to the 0.05 significance level but is not statistically significant (Table 22).

Table 21.–Levene Tests of the Homogeneity of Variances of the Challenge the Process Groups

Levene Statistic	df1	df2	Sig.
1.923	2	19	.174

Table 22.–ANOVA of the Challenge the Process Groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	142.367	2	71.183	3.145	.066
Within Groups	430.106	19	22.637		
Total	572.473	21			

The Welch and Brown-Forsythe test did not show statistical significance at the 0.05 level (Table 23).

Table 23.–Welch and Brown-Forsythe Robust Tests of Equality of Means of the Challenge the Process Groups

	Statistic(a)	df1	df2	Sig.
Welch	3.165	2	7.996	.097
Brown-Forsythe	3.196	2	9.934	.085

a Asymptotically F distributed.

The only contrast test that showed a statistical significant result was contrast two which was between groups one and three assuming equal variances (Table 24). However, this is the only test that shows significant differences between these two groups. The ANOVA, Welch, and Brown-Forsythe test did not show significance at the 0.05 level or the Tamhane post-hoc test below between these two groups or any other combination of groups (Table 25).

Table 24.–Contrast Coefficients of the Challenge the Process Groups

	CTP groups		
Contrast	1.00	2.00	3.00
1	-1	1	0
2	-1	0	1
3	0	-1	1

Table 25.–Contrast Tests of the Challenge the Process Groups

		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
CE	Assume equal variances	1	2.7013	2.30039	1.174	19	.255
		2	7.4786	2.98214	2.508	19	.021
		3	4.7773	2.77799	1.720	19	.102
	Does not assume equal variances	1	2.7013	2.05621	1.314	15.920	.208
		2	7.4786	2.93618	2.547	4.552	.056
		3	4.7773	3.06406	1.559	5.358	.176

The Tamhane Post-Hoc test reveals no statistically significant findings (Table 26).

Table 26.–Tamhane Post-Hoc Test of the Challenge the Process Groups

(I) CTP groups	(J) CTP groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	-2.70130	2.05621	.502	-8.1837	2.7811
	3.00	-7.47857	2.93618	.159	-18.2714	3.3142
2.00	1.00	2.70130	2.05621	.502	-2.7811	8.1837
	3.00	-4.77727	3.06406	.440	-15.2471	5.6925
3.00	1.00	7.47857	2.93618	.159	-3.3142	18.2714
	2.00	4.77727	3.06406	.440	-5.6925	15.2471

Encourage Other to Act

Kouzes and Posner (2002) found in their research that success is not a solo act, it is a team act. In this light, they suggest nine things for leaders to do to enable others to act. These tasks or concepts are: Collaboration improves performance, create a climate of trust, facilitate positive interdependence, support face-to-face interactions, generate power all around, ensure self-leadership, develop competence and confidence, and foster accountability (p. 242).

The *encourage others to act* practice correlated on collective efficacy was 0.44 which is low positive correlation. The coefficient of determination is 0.198 (Figure 11).

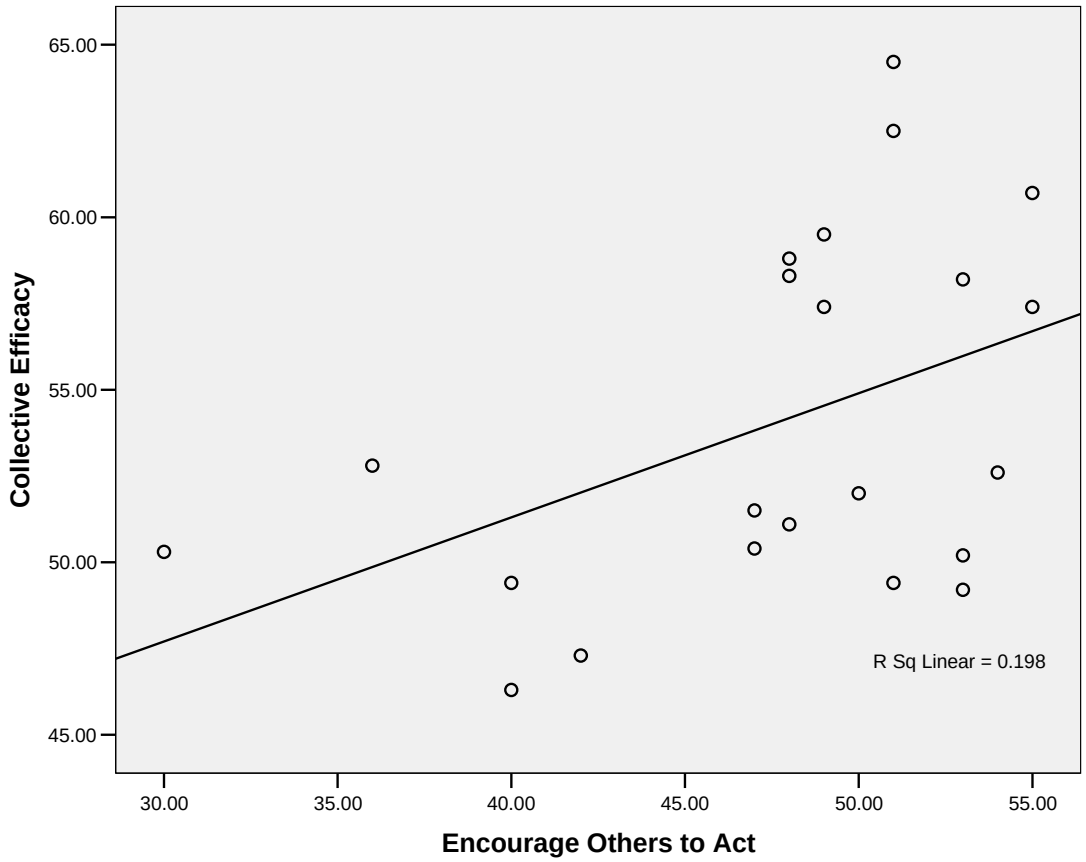

Figure 11. Correlation of the Enable Others to Act Practice on Collective Efficacy

Figure 12 graphically shows the variances and respective collective efficacy means for the three groups. Groups two has the highest collective efficacy mean.

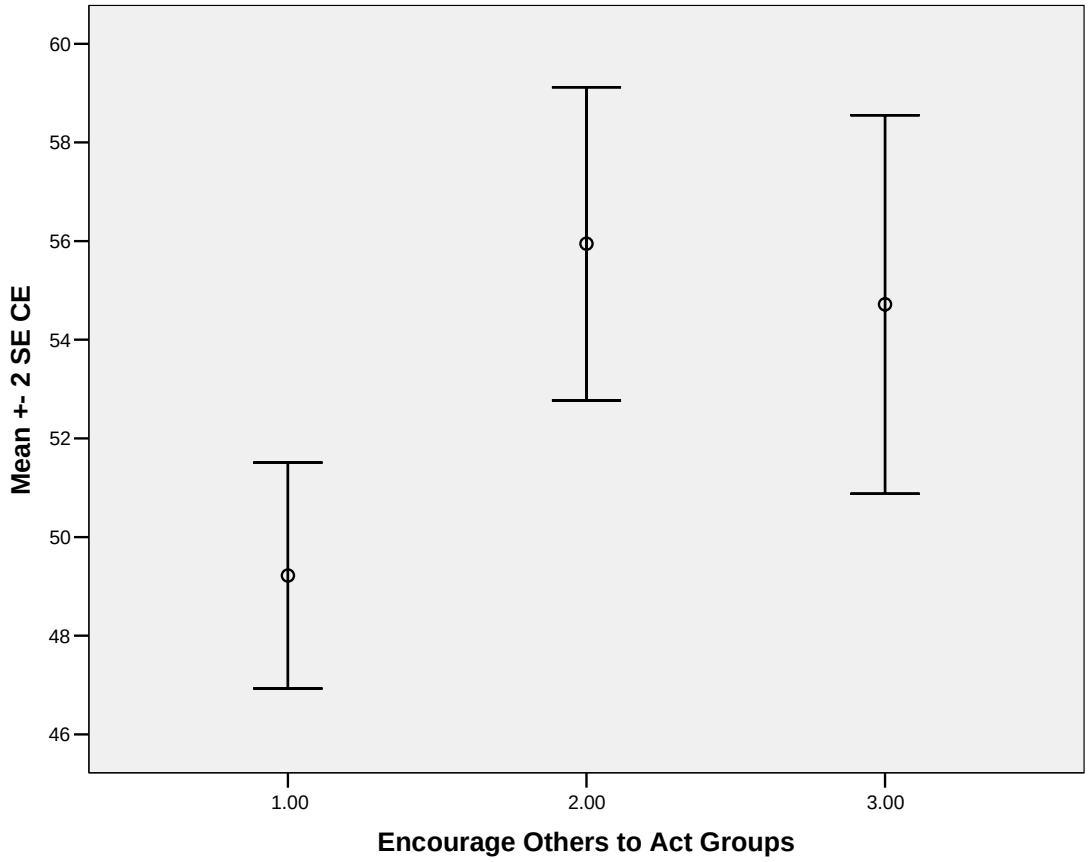

Figure 12. Box Plots of the Encourage Others to Act Groups

The descriptive statistics for this practice show means for these three groups with group two's collective efficacy mean at 55.95. Table 27 also shows that five schools were in group one, 11 were in group two and, six were in group three. The Welch and Brown-Forsythe test will be used to adjust for these differences in cases comprising these three groups.

Table 27.–Descriptive Statistics of the Encourage Others to Act Groups

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1.00	5	49.2200	2.56066	1.14516	46.0405	52.3995	46.30	52.80
2.00	11	55.9455	5.26296	1.58684	52.4098	59.4812	49.40	64.50
3.00	6	54.7167	4.69996	1.91875	49.7844	59.6490	49.20	60.70
Total	22	54.0818	5.22117	1.11316	51.7669	56.3968	46.30	64.50

Table 28 shows a 0.043 result for the Levene test which is statistically significant at the 0.05 level. Therefore, variances will be considered as non-homogenous.

The ANOVA is 0.046 which is significant at the 0.05 level (Table 29).

Table 28.–Levene Test of Homogeneity of Variances of the Encourage Others to Act Groups

Levene Statistic	df1	df2	Sig.
3.729	2	19	.043

Table 29.–ANOVA of the Encourage Others to Act Groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	158.809	2	79.405	3.647	.046
Within Groups	413.664	19	21.772		
Total	572.473	21			

The Welch and Brown-Forsythe tests are 0.013 and 0.028 respectively and are statistically significant at the 0.05 level. These robust test also support the ANOVA for this practice as well (Table 30).

Table 30.–Welch and Brown-Forsythe Robust Tests of Equality of Means of the Encourage Others to Act Groups

	Statistic(a)	df1	df2	Sig.
Welch	6.633	2	11.201	.013
Brown-Forsythe	4.540	2	15.848	.028

a Asymptotically F distributed.

Table 31 shows the contrast tests that were considered. Contrast four considered differences between group one and the combination of groups two and three together.

Table 31.–Contrast Coefficients of the Encourage Others to Act Groups

	EOTA groups		
Contrast	1.00	2.00	3.00
1	-1	1	0
2	-1	0	1
3	0	-1	1
4	-1	.5	.5

Table 32 shows the result of these test and indicates a statistical significant difference in contrast four not assuming equal variances as revealed in the Levene test. Contrast four was significant at the 0.003 level. Two other contrasts were significant as well. Contrast one and two showed a 0.004 and 0.04 significance level which is lower than the 0.05 significance level. These contrasts were between the groups one and two and between groups one and three individually. Table 32 reveals that the *encourage others to act* low group (below the 30th percentile) was significantly different that group two, group three, and the combination of group two and three.

Table 32.–Contrast Test of the Encourage Others to Act Groups

		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
CE	Assume equal variances	1	6.7255	2.51667	2.672	19	.015
		2	5.4967	2.82542	1.945	19	.067
		3	-1.2288	2.36810	-.519	19	.610
		4	6.1111	2.39923	2.547	19	.020
	Does not assume equal variances	1	6.7255	1.95690	3.437	13.783	.004
		2	5.4967	2.23450	2.460	7.938	.040
		3	-1.2288	2.48992	-.494	11.491	.631
		4	6.1111	1.69154	3.613	12.812	.003

The Tamhane post-hoc test also show a significant difference between groups one and two (Table 33).

Table 33.–Tamhane Test of Multiple Comparisons of the Encourage Others to Act Groups

(I) EOTA groups	(J) EOTA groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	-6.72545(*)	1.95690	.012	-12.0380	-1.4129
	3.00	-5.49667	2.23450	.114	-12.2237	1.2304
2.00	1.00	6.72545(*)	1.95690	.012	1.4129	12.0380
	3.00	1.22879	2.48992	.950	-5.7175	8.1751
3.00	1.00	5.49667	2.23450	.114	-1.2304	12.2237
	2.00	-1.22879	2.48992	.950	-8.1751	5.7175

* The mean difference is significant at the .05 level.

Encourage the Heart

The climb in pursuit of greatness can be arduous and long. Leaders who encourage the heart of their followers do two things. They uplift people and they also draw people forward. Kouzes and Posner (2002) suggest four things for leaders to do: (1) Focus on clear standards, (2) Expect the best, (3) Pay attention, and (4) Personalize recognition (p. 318).

The last practice to be correlated to collective efficacy is the *encourage the heart* practice. Figure 13 shows this practice graphically.

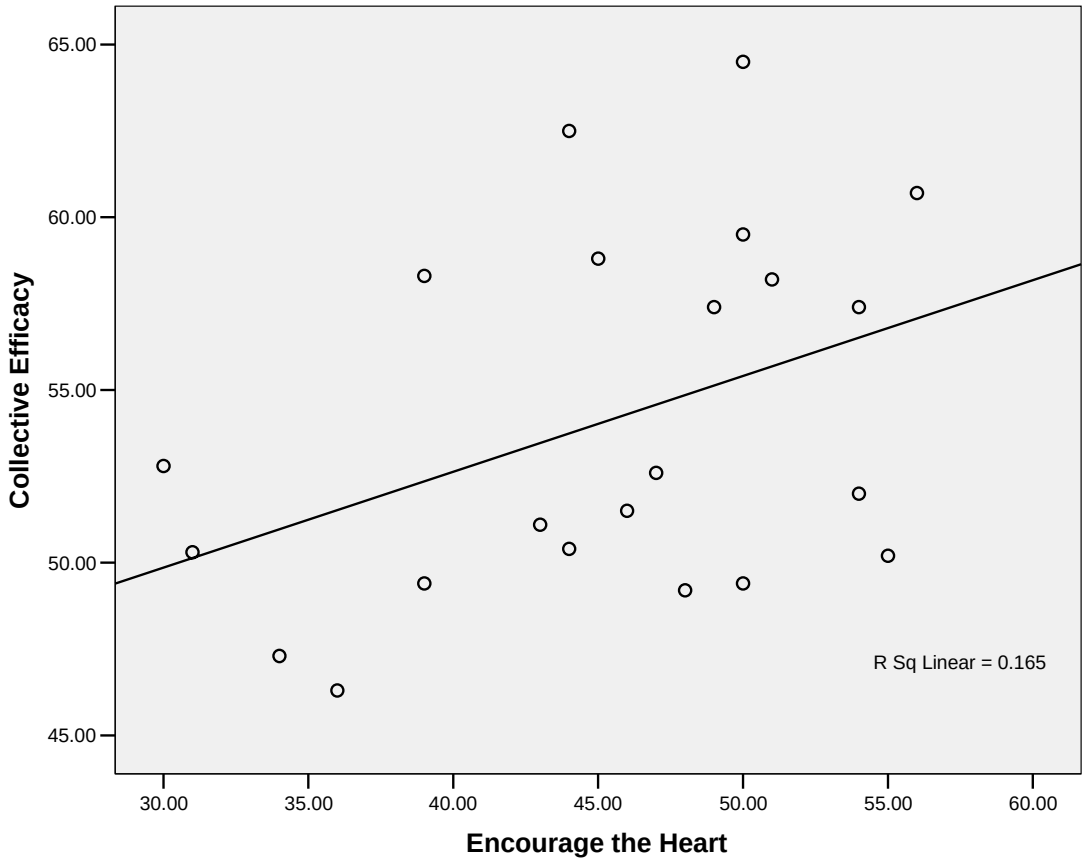

Figure 13. Correlation of the Encourage the Heart Practice on Collective Efficacy

The *encourage the heart* practice correlation on collective efficacy is 0.41 which is considered low. The coefficient of determination is 0.165.

Figure 14 graphically demonstrates the box plots of the three groups in this practice. Group two has the highest collective efficacy mean.

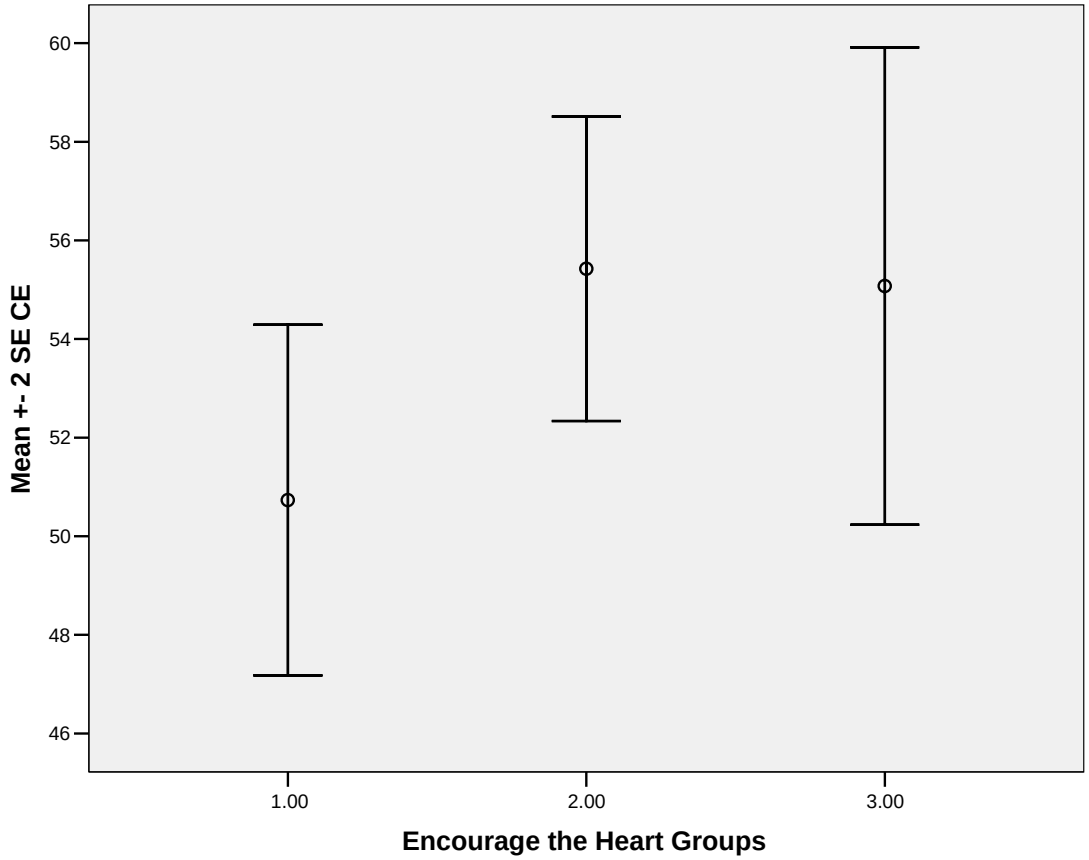

Figure 14. Box Plots of the Encourage the Heart Groups

Table 34 shows the descriptive statistics for this practice. There are six, twelve, and four schools in groups one, two, and three respectively. Therefore, the Welch and Brown-Forsythe tests will be used in addition to the ANOVA.

Table 35 shows the Levene test for homogeneity of variance at 0.377. This is not below the 0.05 significance level and therefore the three groups will be considered as having homogenous or equal variances.

Table 36 shows the ANOVA for this practice at 0.186 which is not statistically significant at the 0.05 confidence level.

Table 34.–Descriptive Statistics of the Encourage the Heart Groups

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1.00	6	50.7333	4.35737	1.77889	46.1606	55.3061	46.30	58.30
2.00	12	55.4250	5.34622	1.54332	52.0282	58.8218	49.20	64.50
3.00	4	55.0750	4.83968	2.41984	47.3740	62.7760	50.20	60.70
Total	22	54.0818	5.22117	1.11316	51.7669	56.3968	46.30	64.50

Table 35.–Levene Test of Homogeneity of Variances of the Encourage the Heart Groups

Levene Statistic	df1	df2	Sig.
1.027	2	19	.377

Table 36.–ANOVA of the Encourage the Heart Groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	92.869	2	46.435	1.840	.186
Within Groups	479.603	19	25.242		
Total	572.473	21			

The Welch and Brown-Forsythe tests do not show significance at the 0.05 level which is the same result as the ANOVA (Table 37). These groups will thus be considered as coming from the same population.

Table 38 shows the contrast tests that will be considered. Contrast four compares group one against the combination of groups two and three.

Assuming equal variances as revealed in the Levene test, none of the contrast test show significance at or below the 0.05 level (Table 39).

Table 37.–Welch and Brown-Forsythe Robust Tests of Equality of Means of the Encourage the Heart Groups

	Statistic(a)	df1	df2	Sig.
Welch	2.010	2	8.064	.196
Brown-Forsythe	2.020	2	12.011	.175

a Asymptotically F distributed.

Table 38.–Contrast Coefficients of the Encourage the Heart Groups

	ETH groups		
Contrast	1.00	2.00	3.00
1	-1	1	0
2	-1	0	1
3	0	-1	1
4	-1	.5	.5

Table 39.–Contrast Tests of the Encourage the Heart Groups

		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
CE	Assume equal variances	1	4.6917	2.51208	1.868	19	.077
		2	4.3417	3.24309	1.339	19	.196
		3	-.3500	2.90071	-.121	19	.905
		4	4.5167	2.51208	1.798	19	.088
	Does not assume equal variances	1	4.6917	2.35505	1.992	12.214	.069
		2	4.3417	3.00334	1.446	6.057	.198
		3	-.3500	2.87010	-.122	5.681	.907
		4	4.5167	2.28557	1.976	9.925	.077

Analysis of Research Question #2

The second point in the research was to reveal any other characteristics that may be helpful in understanding the relationship between collective efficacy and leadership effectiveness.

What characteristics within each school are important in understanding the connections between collective efficacy and leadership effectiveness at selected public schools in the Katy Independent School District?

On each survey, there were six demographic questions and one open ended question. The demographic questions asked about gender, length of teaching experience situations, and race. The length of teaching experience questions are listed as follows:

- Including this year, how many total years of experience do you have under the leadership of this principal?
- How many years of experience do you have teaching in Katy Independent School District?
- How many years of experience do you have in teaching overall?
- How many years of teaching experience do you have with five options:
  - Beginning teacher (within your first year of teaching)
  - 1 – 5 years experience
  - 6 – 10 years experience
  - 11 – 20 years experience
  - Over 20 years experience

This last teaching experience question has the answer choices in the same format as the academic excellence indicator system (AEIS) from our state accountability system.

Table 40 summarizes the length of teaching experience in various capacities from LPI participants.

Table 40.–Average Teaching Experience for LPI Participating Schools

School	Average Years Experience Under their Principal	Average Years Experience in Katy ISD	Average Years Experience Overall
1	1.75	8.33	13.00
2	3.20	3.60	9.80
3	5.00	6.67	17.67
4	2.30	4.50	6.10
5	6.57	9.73	14.53
6	1.66	5.33	7.33
7	6.00	7.89	15.11
8	3.17	10.17	13.50
9	2.33	10.67	14.33
10	1.86	5.43	12.57
11	3.00	3.00	10.50
12	1.00	4.00	7.00
13	2.50	3.57	8.57
14	2.00	3.80	12.00
15	10.00	9.00	10.00
16	5.11	8.11	15.80
17	12.50	17.00	21.00
18	1.13	10.38	12.75
19	1.00	15.50	21.00
20	1.20	6.60	11.50
21	2.33	4.00	7.33
22	1.38	6.13	12.63

The minimum average years experience under their principal score was 1 which indicates a new campus probably in its first year of operation (Table 41). Katy ISD is a growing a district and is building a number of new schools each year.

Most of the participants are white. There were three African American participants, seven Hispanic, one Native American, and no Asian/Pacific Islanders that also participated on the LPI survey (Table 42).

Table 41.–Descriptive Statistics for LPI Participating Schools

Statistic	Average Years Experience Under Their Principal	Average Years Experience in Katy ISD	Average Years Experience Overall
Mean	3.50	7.43	12.32
Median	2.33	6.64	12.60
Mode	2.33	4.00	7.33
Range	11.50	14.00	17.90
Minimum	1.00	3.00	3.10
Maximum	12.50	17.00	21.00

Table 42.–Ethnicity for LPI Participants

School	African American	Hispanic	White	Asian/Pacific Islander	Native American
1	0	0	12	0	0
2	0	0	5	0	0
3	1	0	2	0	0
4	0	0	5	0	0
5	0	5	10	0	0
6	0	0	3	0	0
7	0	0	9	0	0
8	0	1	5	0	0
9	0	0	3	0	0
10	0	0	6	0	0
11	0	0	2	0	0
12	0	0	3	0	0
13	1	1	5	0	0
14	0	0	4	0	1
15	0	0	1	0	0
16	0	0	10	0	0
17	0	0	2	0	0
18	0	0	8	0	0
19	1	0	5	0	0
20	0	0	10	0	0
21	0	0	3	0	0
22	0	0	8	0	0

Most of the participants were female. There were 15 males and 117 females taking the LPI survey over the 22 schools (Table 43).

Table 43.–Gender for LPI Participants

School	Male	Female
1	3	9
2	0	5
3	0	3
4	1	4
5	0	15
6	1	2
7	2	6
8	2	4
9	0	3
10	0	7
11	0	3
12	1	2
13	1	6
14	0	4
15	0	1
16	0	10
17	0	2
18	1	7
19	0	6
20	1	9
21	1	2
22	1	7

There were over twice the number of collective efficacy participants with 328 responding compared to only 135 LPI participants (Table 44).

There were more participants on the collective efficacy survey than the LPI. However, the descriptive statistics for these participating schools are similar. For example, the average years experience overall for collective efficacy participants was 12.27 and for LPI participants as indicated in Table 45, it was 12.32.

Table 44.–Teaching Experience for Collective Efficacy Participants

School	Average Years Experience Under Their Principal	Average Years Experience in Katy ISD	Average Years Experience Overall
1	1.95	5.73	14.98
2	5.50	6.20	14.20
3	4.00	4.43	8.79
4	2.20	4.50	8.60
5	5.00	8.50	11.80
6	2.30	7.80	13.00
7	7.40	9.70	13.30
8	3.50	5.50	10.50
9	3.00	6.70	9.60
10	3.27	5.45	11.55
11	3.50	9.70	14.30
12	1.00	6.75	13.35
13	2.80	4.10	7.70
14	3.80	11.40	15.20
15	2.00	5.00	7.70
16	5.30	8.50	13.40
17	6.00	10.60	18.90
18	1.40	10.50	16.40
19	1.00	6.60	11.80
20	1.20	7.40	15.50
21	2.80	6.50	9.10
22	1.60	7.20	10.20

Table 45.–Descriptive Statistics for Collective Efficacy Participants per Campus

Statistic	Average Years Experience Under Their Principal	Average Years Experience in Katy ISD	Average Years Experience Overall
Mean	3.20	7.22	12.27
Median	2.90	6.73	12.40
Mode	3.50	8.50	11.80
Range	6.40	7.30	11.20
Minimum	1.00	4.10	7.70
Maximum	7.40	11.40	18.90

Most of the collective efficacy survey participants were white (Table 46). One participant was Native American, two were Asian/Pacific Islander, 10 Hispanic, and five were African American.

Table 46.–Ethnicity for Collective Efficacy Participants

School	African American	Hispanic	White	Asian/Pacific Islander	Native American
1	0	1	29	1	0
2	0	0	9	0	0
3	0	0	7	0	0
4	0	0	11	0	0
5	0	4	17	0	0
6	0	1	7	0	0
7	0	0	24	0	0
8	0	0	11	0	0
9	0	0	11	0	0
10	0	0	12	0	0
11	0	0	6	0	0
12	3	0	7	0	0
13	0	1	14	0	0
14	0	0	5	0	0
15	0	1	5	0	0
16	0	1	17	0	0
17	0	0	8	0	0
18	0	1	26	0	0
19	1	0	16	1	0
20	0	0	15	0	0
21	1	0	11	0	0
22	0	0	17	0	1

Forty-two (14.3%) collective efficacy participants are male and 264 (85.6%) are female (Table 47).

Table 47.–Gender for Collective Efficacy Participants

School	Male	Female
1	10	21
2	0	10
3	1	6
4	0	11
5	0	21
6	0	8
7	8	16
8	2	9
9	0	11
10	0	12
11	0	6
12	0	9
13	1	14
14	0	5
15	1	5
16	0	18
17	0	8
18	4	23
19	6	13
20	3	12
21	2	10
22	3	16

The mean LPI score was 225.1 and the median was 234.26. The maximum was 271.2 and the minimum was 160.67. The standard deviation was 29.96 for LPI scores (Table 48).

Table 48.–Schools and Their Overall LPI Score and Collective Efficacy Score

School	Overall LPI Score	Collective Efficacy Score
1	235.4	57.4
2	257.8	58.2
3	258.0	52.0
4	271.2	60.7
5	250.5	50.2
6	160.7	52.8
7	213.0	51.1
8	207.7	46.3
9	253.3	64.5
10	243.0	62.5
11	168.5	50.3
12	240.3	52.6
13	227.1	51.5
14	198.6	49.4
15	224.0	58.8
16	243.5	49.4
17	200.5	58.3
18	212.8	50.4
19	239.2	49.2
20	233.1	59.5
21	176.0	47.3
22	239.1	57.4

The mean collective efficacy score was 54.08 with a median of 52.30 (Table 49). The maximum score was 64.5 and the minimum score was 46.30. The standard deviation of scores was 5.22.

Table 49.–Schools and Each Leadership Practice Score

School	Model the Way	Inspire a Shared Vision	Challenge the Process	Enable Others to Act	Encourage the Heart
1	40	37	37	41	41
2	43	42	44	44	43
3	40	43	44	43	45
4	43	45	44	46	46
5	40	38	40	45	45
6	23	25	29	32	25
7	35	32	32	40	36
8	33	40	35	33	30
9	40	43	43	43	42
10	41	41	42	43	37
11	27	33	28	23	25
12	38	40	39	45	38
13	37	37	38	39	38
14	35	32	32	34	33
15	38	36	37	42	39
16	40	39	39	43	41
17	29	31	34	40	32
18	37	32	33	41	37
19	38	37	37	45	40
20	38	36	37	41	41
21	29	26	26	36	28
22	41	30	36	47	45

Tables 50 and 51 show two sets of correlations from LPI participants. LPI participant scores were correlated on collective efficacy in Table 50. These same scores were also correlated to overall leadership effectiveness in Table 51.

Table 50 indicates little if any correlation between any of these years of experience and collective efficacy.

Table 51 shows that there is little if any correlation between these years of experience categories on overall leadership effectiveness.

Tables 52 and 53 show correlations and coefficients of determinations from collective efficacy participants on collective efficacy and LPI scores.

Table 50.–Correlation of LPI Participant Average Years of Experience on Collective Efficacy

	Average Years Under Their Principal	Average Years in Katy ISD	Average Years Teaching Overall
r	0.08	0.04	-0.11
r^2	0.01	0.00	0.01

Table 51.–Correlation of LPI Participant Average Years of Experience on Overall Leadership Effectiveness

	Average Years Under Their Principal	Average Years in Katy ISD	Average Years Teaching Overall
r	-0.05	0.09	-0.11
r^2	0.00	0.01	0.01

Table 52.–Correlation of Collective Efficacy Participant Average Years of Experience on Collective Efficacy

	Average Years Under Their Principal	Average Years in Katy ISD	Average Years Teaching Overall
r	-0.13	-0.29	-0.04
r^2	0.02	0.08	0.00

Table 53.–Correlation of Collective Efficacy Participant Years of Experience on Overall Leadership Effectiveness

	Average Years Under Their Principal	Average Years in Katy ISD	Average Years Teaching Overall
r	-0.03	-0.48	-0.29
r^2	0.00	0.23	0.08

The average years under their principal, the average years in Katy ISD, and the average years teaching overall categories indicate little if any correlation on collective efficacy (Figure 15). However, the average years in Katy ISD category was the closest to a low positive correlation on collective efficacy with an r value of -0.48. Figure 15 shows the years in Katy ISD category graphically.

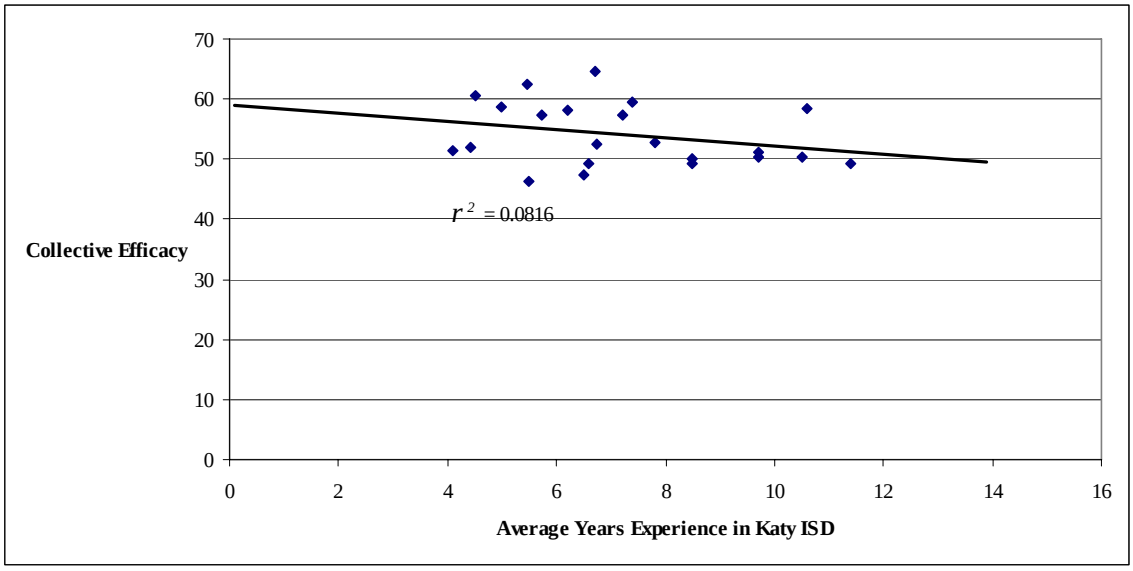

Figure 15. Correlation of the Average Years Experience in Katy ISD on Collective Efficacy from Collective Efficacy Participants.

Table 53 shows that the average years under their current principal and the average years teaching overall have little if any correlation to overall leadership effectiveness. However, the average years in Katy ISD does show a low negative correlation on leadership effectiveness with an r value of -0.48. Figure 16 graphically shows the average years in Katy ISD category.

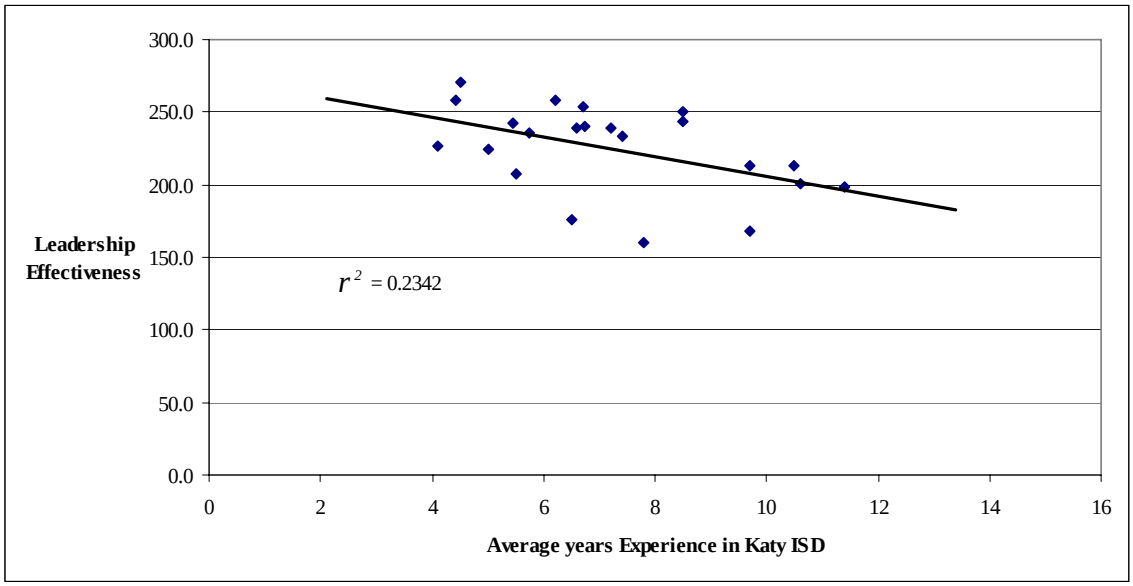

Figure 16. Correlation of Average Years Experience in Katy ISD on Leadership Effectiveness from Collective Efficacy Participants

Figure 17 graphically shows the second strongest correlated category, the average years teaching experience overall, from the collective efficacy participants on leadership effectiveness.

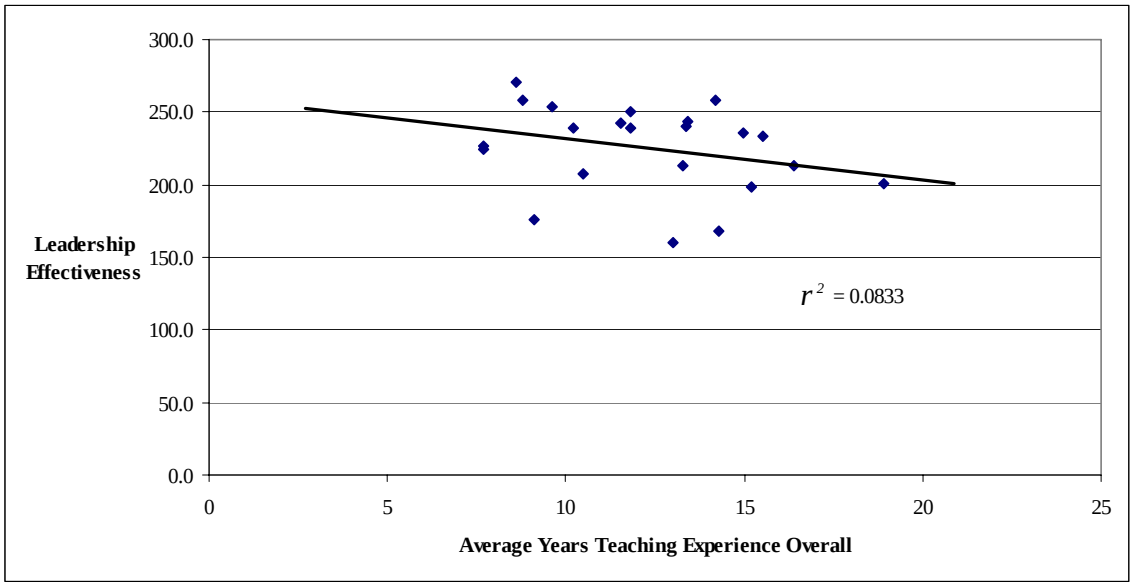

Figure 17. Correlation of Average Years Teaching Experience Overall on Leadership Effectiveness from Collective Efficacy Participants

Open Ended Questions

In answering research question two, the researcher put an open ended question on each survey. On the collective efficacy survey, the prompt read:

"Feel free to make any additional comments regarding your perception of your campus' ability to effectively teach students. Please refrain from using the name of your principal."

On the LPI survey, the prompt read:

"Feel free to make any additional comments regarding your perception of your campus' leadership effectiveness. Please refrain from using the name of your principal."

Table 54 summarizes the number of responses received from each survey.

Table 54.–Number of Open Ended Comments per Campus

Campus	Collective Efficacy Survey	LPI Survey
1	3	1
2	4	3
3	2	0
4	0	1
5	6	6
6	1	0
7	4	1
8	3	2
9	3	1
10	2	2
11	1	0
12	5	0
13	6	2
14	2	2
15	2	0
16	3	3
17	1	1
18	4	1
19	1	2
20	2	1
21	4	0
22	2	2

There was a total of 61 comments from collective efficacy participants and 31 comments from LPI participants.

The researcher used naturalistic data analysis techniques of triangulation and the development of working hypothesis as suggested by Erlandson et al. (1993). The third technique testing of the working hypotheses was not done since the researcher was not able to go to the respective campuses or participants for further data acquisition. The collective efficacy and LPI responses were categorized into two general categories. For collective efficacy, the responses were categorized as either high or low. For LPI respondents, the responses were categorized as either positive or negative (Table 55).

Table 55.–Schools Categorized on Open Ended Responses from Collective Efficacy Survey Participants.

Low Collective Efficacy Campuses	High Collective Efficacy Campuses
1, 6, 7, 11, 12, 15, 17, 18, 21, 22	3, 5, 8, 9, 10, 13, 16, 19, 20

An ANOVA was performed on collective efficacy scores from the researcher created groups. Table 56 shows the result of that ANOVA.

Table 56.–ANOVA Table of the High and Low Collective Efficacy Campuses

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.293427	1	0.293427	0.010255	0.920524	4.451322
Within Groups	486.4329	17	28.6137			
Total	486.7263	18				

The groups created by the researcher show no statistically significant difference between them.

Responses from the leadership effectiveness survey were also categorized as perceiving their principal as demonstrating positive leadership or negative leadership. Table 57 shows the result of the schools the researcher placed in each category. Table 58 shows the ANOVA performed on those categories and the subsequent result.

The ANOVA in Table 58 shows a statistically significant difference in the perceived leadership effectiveness based on the groups created by the researcher's perceptions of the comments offered in the open ended response question. This is statistically significant at the 99.5% confidence level.

Table 57.–Schools Categorized on Open Ended Responses from Leadership Effectiveness Survey Participants.

Campuses Perceived with Negative Leadership	Campuses Perceived with Positive Leadership
8, 14, 16, 17, 18	1, 2, 4, 5, 7, 9, 10, 13, 19, 20, 22

Table 58.–ANOVA Table of the Positive and Negative Leadership Effectiveness Campuses

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	2980.064	1	2980.064	10.90322	0.005241	4.60011
Within Groups	3826.473	14	273.3195			
Total	6806.538	15				

Summary

This study investigated data from two different research instruments as well as analyzing the demographic data of participants from both surveys. There were a total of 135 LPI participants and 328 collective efficacy participants that made up 22 school responses.

The first research question dealt with discovering any connections between overall leadership effectiveness and collective efficacy. The overall indication is that there is a low positive correlation between these two concepts. Of the five leadership practices that form the overall leadership construct, the challenge the way practice was the strongest when correlated to collective efficacy. The weakest correlated practice was the *inspire a shared vision*.

The second research question investigated school characteristics that might help explain any connections between leadership effectiveness and collective efficacy. Both

quantitative and qualitative data were examined. There were some low to moderate correlations between teaching experience and leadership effectiveness and/or collective efficacy in this study. Qualitative data also reveal connections between these two variables under study.

CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

The purpose of this research was to investigate leadership effectiveness and collective efficacy in selected public schools as perceived by teachers in the Katy Independent School District. Data were collected in the Spring of 2006.

A review of the literature was conducted to establish the basis of these two concepts and form a foundation upon which to base this study. Collective efficacy was defined and a historical explanation of its origins and underpinnings was also communicated. Leadership was described in terms of models it was studied under and the historical empirical research methods it has undergone. Lastly, current research on the connections between collective efficacy and leadership was described. This review provided a framework for these two research questions.

1. What are the connections between leadership effectiveness and collective efficacy as perceived by teachers at selected public schools in the Katy Independent School District?
2. What characteristics within each school are important in understanding the connections between collective efficacy and leadership effectiveness at selected public schools in the Katy Independent School District?

Summary of Findings

Provided below is a review of my findings for each research question.

1. What are the connections between leadership effectiveness and collective efficacy as perceived by teachers at selected public schools in the Katy Independent School District?

A leadership effectiveness survey called the Leadership Practices Inventory (LPI-Observer) was utilized in gathering leadership data (Kouzes and Posner, 2002). The collective efficacy short form was the survey instrument used to collect collective efficacy data (Goddard, 2002b). The responses to the 30 LPI questions plus 7 demographic questions were analyzed as well as the responses to the 12 collective efficacy questions plus the same 7 demographic questions as the LPI. Table 6 shows that overall leadership effectiveness is positively correlated on collective efficacy with an r value of 0.46. The coefficient of determination (r2) for this correlation is 0.21 meaning that 21 percent of the variance in leadership effectiveness can be associated with the variance in collective efficacy.

Each of the five leadership practices that comprise the overall leadership effectiveness score was correlated to collective efficacy. The *challenge the process* practice had the highest positive correlation to collective efficacy with an r value of 0.48 which is a low positive correlation. The coefficient of determination (r2) value for this practice is 0.24. When the data pool was modified to nineteen schools, the correlations were stronger for this practice. The modified correlation was 0.53. The lowest correlated practice on collective efficacy was the *inspire a shared vision* practice. The r

value was 0.36 and the r2 value is 0.13 (see table 6). However, the modified data pool showed that the *inspired a shared vision* practice had a stronger correlation on collective efficacy than the original data pool but was still considered to be a low positive correlation.

The LPI instrument has breaks in each of these practices at the 30th and 70th percentile based on a norm group of approximately 18,000 participants. These percentile breaks create three groups, the low (below 30th percentile), the middle group (between the 30th and 70th percentiles), and the high group (above the 70th percentile). All five practices had school scores in each of the three groups allowing for further analysis. ANOVAs, the Levene test for homogeneity of variances, the Welch and Brown-Forsythe tests for robustness, contrast tests, and the Tamhane tests were performed accordingly. In each of these test, collective efficacy was considered to be the dependent variable and each of the five leadership practices was considered separately as the independent variable. Table 12 Welch and Brown-Forsythe tests show the *model the way* practice groups as being statistically significantly different and Table 13 shows that this difference is between groups one and three. Tables 18 and 19 do not show any statistical significant difference between the three groups in the *inspire a shared vision* practice. Even though the *challenge the process* practice is the most correlated on collective efficacy, Tables 22 and 23 do not show a significant difference between any of the three groups. In the *encourage others to act* practice, there is statistical significant difference between the three groups as indicated in both Tables 29 and 30. There is no significant difference between the groups in the *encourage the heart* leadership practice.

2. What characteristics within each school are important in understanding the connections between collective efficacy and leadership effectiveness at selected public schools in the Katy Independent School District?

At the end of each survey, teachers were asked six questions regarding length of their teaching experience, gender, and race. There was also an open-ended question regarding their perception of collective efficacy for their campus or their perception of leadership effectiveness for their campus. Correlations and coefficient of determinations were performed using three length of teaching experience variables on both the overall leadership effectiveness and collective efficacy scores.

LPI participants (n=135) and their respective length of teaching experience variables showed little to no correlation to both overall leadership and collective efficacy scores. Table 50 and 51 shows that some correlations had a slightly negative correlation but none of the six correlations performed showed any strength in the moderate or higher strength correlation ranges.

Collective efficacy participants (n=328) and the three length of teaching experience variables were correlated on both collective efficacy and overall leadership effectiveness. Table 52 shows that there was little to no correlation from any of the three variables when correlated on collective efficacy. However, table 53 shows that when correlated on overall leadership effectiveness, the average years in Katy ISD variable showed a low negative correlation. Collective efficacy participants who have been in the district longer have a more negative perception of the leadership effectiveness at their respective campus.

The researcher asked an open ended question on each survey related to the overall nature of the survey. The question on the collective efficacy survey read: "Feel free to make any additional comments regarding your perception of your campus' ability to effectively teach students. Please refrain from using the name of your principal." Sixty one participants out of 328 responded and the researcher grouped the responses by the school by naturalistic data analysis methods.

School numbers 11, 17, and 15 were categorized as having a perceived lower collective efficacy due to administrative constraints getting in their way to effectively teach. One participant wrote, "In some circumstances, the interference with effective teaching comes from the district level, not the campus level. The interference includes demands on teacher time and multitude of benchmark and spiraling reviews tests required." Another participant wrote, "Our campus works effectively within the constraints of the system to meet the needs of our students. . . . The number of staff members to meet inclusion demands is not sufficient. . . . the hours the students should be getting are not possible with current staffing."

Some schools were grouped as having a perceived lower collective efficacy due to either discipline concerns and/or the lack of administrative support. One school's participants wrote, "At this campus, teachers feel that they do not have the full support of administration to deal with difficult students." Another communicated, ". . . I would like the school to implement more positive rewards to motivate discipline problems to improve their [the students'] behavior." Another school participant explained, "Assistant principals do not follow through w/ discipline and the students know it!!!!!!!!!!"

Home life was also a contributing factor to a school being perceived with lower collective efficacy from the researcher's perspective. One wrote, "Demographics in my school should be considered as a major factor contributing to learning. Students do not come to school with adequate background knowledge nor are many of them receiving appropriate support at home." One teacher talked about the negative effect of the home life when the teacher stated, "I feel, from conversation with students, that a good portion of our students have a challenging home life, that does not support their educational needs, nor motivate them to learn. I think that if students and teacher (sic) had more parental support, we would be able to accomplish much more."

The researcher categorized other schools as being perceived with a higher collective efficacy. School numbers 3, 5, 8, 9, 10, 13, 16, 19, and 20 were perceived by the researcher as high collective efficacy school. One participant described the nature of their team's efforts when they wrote, "We work together to come up with solutions. We pull from each others strengths. If something does not work, we try something else. We are determined to see each child reach their potential. Everyone works together to see that all children are successful." Another participant from another campus wrote, "the campus as a whole is very effective with teaching students, they are willing to try new things to help ensure what is best for the students." One teacher talked about the diversity in student backgrounds and how that it is hard to overcome when that teacher stated, "Understanding of our students backgrounds and culture and the students' understanding of the background and culture of the teachers make it difficult to create an environment of trust which affects the ability to motivate and educate the studetns (sic)

in this building. However, I believe our campus does everything it can to educate the staff about the diversities and how to overcome them."

Some teachers attributed their higher collective efficacy belief to administrative support as evidenced by this participant, "We have a motivated, supportive, administration that focuses on student achievement over school fluff . . . Administration supports this effort by being visible, and providing behavior intervention when necessary. There is an open door policy from the top down that models for the teachers a solid collaborative base." Another teacher from a different campus wrote, "Working under the leadership of this principal has been wonderful."

The researcher categorized two campuses as equally strong in both lower and higher collective efficacy groups. Each school had comments equally reflective of both categories. One school had comments such as, "We have very high expectations at this school and it shows!" At the same school, another teacher wrote, ". . . I feel my job is to provide education for all my students and I think may [many] (sic) kids suffer do (sic) to teachers having to deal with one student. We need help and should not feel bad for asking." A third participant wrote, "Teachers here collaborate when teaching students. Students' problems are handled by several teachers working together. No one is left on their own to deal with reluctant learners/discipline problems." The other school placed in this category by the researcher had these comments from teachers. "There comes a point in time when some folks just need to retire," one wrote. Another teacher from the same school commented, "I'm at a wonderful place where teachers and administrators truly care about the kids."

The other open ended question on the leadership survey read: "Feel free to make any additional comments regarding your perception of your campus' leadership effectiveness. Please refrain from using the name of your principal." The researcher categorized schools based on their collective comments into campuses with positive and negative leadership categories. Five schools were categorized as exhibiting negative perceptions of leadership effectiveness and eleven were categorized as exhibiting positive perceptions of leadership effectiveness.

Campus numbers 8, 14, 16, 17, and 18 were perceived as having assessed their campus leadership effectiveness as negative. Some teachers attributed their negative perception due to a lack of leadership communication. One teacher wrote, ". . . The overall goals are not communicated with the staff." Another wrote, "There have been several years when I believe the administration has made decisions about personnel yet is unwilling to share the decisions until the last minute (like the last workday of the year). I think that kind of behavior makes people feel unimportant." Participants also thought that no recognition contributed to their negative perception. Kouzes and Posner (2002) suggest that leaders who encourage the heart should personalize recognition. One teacher commented on the lack of rewards when that teacher stated, "Pricipals (sic) have very limited resources when it comes to recognitions and rewards or even incentives." Another teacher from a different campus communicated several factors when s/he wrote, "My principal is a very nice individual but we do not see her often around campus. Most of our contact comes once a month in the staff meetings. Very little encouragement on our campus."

Those campuses perceived by the researcher as having positive leadership were campus numbers 1, 2, 4, 5, 7, 9, 10, 13, 19, 20, and 22. The motivating factor behind some of the participant comments were the support they receive from the leader, their listening ability, and the encouragement the leader offers. Kouzes and Posner's (2002) research suggest that encouragement is so important, it stands alone as one of the five leadership practices the research project is based upon. In recognizing support by the principal, a participant wrote, "Having a positive, supportive principal has made my teaching experience better. When I feel supported and motivated, it shows positively in lessons and communication with students in the classroom." Another school participant wrote, "Our principal is a great leader because it seems that he doesn't pick favorites. He also supports his teachers."

Those participants who communicated about a listening principal wrote comments such as, "My principal is always there for the faculty to discuss personal matters as well as professional issues," and, "My principal is a very fair and straightforward person who is always there to listen and help when needed."

Other schools and participants commented on their appreciation for the encouragement that their principal offered. One wrote, ". . . He is so great about encouraging us on a job well done and gives us jeans days as rewards . . . to a teacher a jeans day is wonderful!"

Conclusions

A review of the literature and the analysis of the data by this researcher form the basis for the following conclusions as they relate to the purposes of this study:

1. A low positive correlation between overall leadership effectiveness and collective efficacy exists. However a moderate positive correlation exists with the modified data pool.
2. A low positive correlation exists in all five leadership practices on collective efficacy. In the modified data pool, the *model the way* and *challenge the process* practices showed a moderate positive correlation on collective efficacy.
3. The *challenge the way* practice has the highest correlation on collective efficacy at 0.48 which is almost considered a moderate correlation. This correlation increased in the modified data pool to 0.53.
4. This research supports the position that leaders who ranked in the low range on the *model the way* leadership practice were from a different population than those schools in the high range.
5. This research supports the position that leaders who ranked in the lowest percentile group in the *encourage others to act* practice were from a different population than leaders that scored in the middle or high percentile groups.
6. This research supports the position that there is no difference in population of leaders in these three leadership practices: *inspire a shared vision, challenge the process*, and *encourage the heart.*

7. This research supports the position that there is little to no relation between length of employment under their principal, length of employment in Katy ISD and length of teaching employment overall on either leadership effectiveness or collective efficacy. There was only one moderate negative correlation between length of employment in Katy ISD on leadership effectiveness from collective efficacy survey participants, not leadership survey participants.
8. This research revealed a statistical significant difference in schools grouped by naturalistic means on overall leadership effectiveness scores. Factors contributing to leadership effectiveness were teacher support, listening, and encouraging. Factors that did not contribute to effective leadership were no communication and no recognition.
9. The research revealed that collective efficacy participants attributed higher collective efficacy schools as those having more administrative support of teachers and better teaming. Participants in schools with lower collective efficacy communicated problems with discipline, problems with home life, and a lack of administrative support.
10. A review of the literature reveals that high collective efficacy is a stronger predictor of student success versus the socio-economic status factor.
11. The data in this research confer the research by Chen and Bliese (cited in Tagger & Seijts, 2003) and Bohn (2002) that leadership behaviors are directly related to collective efficacy. Bohn's (2002) conclusions were based in part from an analysis of open ended questions indicating that leadership

was the category given the most credit for affecting organizational confidence (collective efficacy).

12. Pescosolido (2001) suggested that informal leaders, leaders that emerge from a group but are not designated in a formal sense, have an effect on group efficacy. A review of this research data would support this assertion from the literature.
13. A review of the literature found that leaders who display confidence affect collective efficacy through vicarious and social persuasion avenues which are two of the efficacy shaping factors (Watson et al., 2001).
14. A review of the literature found that transformational leadership affected collective efficacy levels through two mediating variables. Empowerment and group cohesiveness were the two shown to mediate the transformational leadership effect on collective efficacy. (Jung & Sosik, 2002)

Recommendations

At a time in public schools when accountability is taking on new uncharted territory and is used for more and more decisions, student performance is critical. Principals who are hired to ensure that students learn as reflected on those accountability measures are bound to seek practices that have meaningful results. With a changing demographic, the No Child Left Behind Act of 2001, and Texas Assessment of Knowledge and Skills (TAKS) accountability practices affecting schools, principals are

under a great deal of pressure to seek effective leadership or campus based practices that will lead to high student performance.

The literature for this study along with the findings revealed in this research support these recommendations.

1. Given that overall leadership effectiveness can explain over 25% of the variance in collective efficacy, principals need to be cognizant of their leadership effectiveness and the potential affect it will have with campus collective efficacy.
2. Districts need to assess their principals with credible assessment measures such as the LPI and assist with realistic improvement plans. Even though demographic variables are not controlled by the campus or district, growth opportunities are within the realm of control and can potentially explain approximately 25% of the variance in the collective efficacy score of a campus.
3. Campuses should assess their own collective efficacy levels in an attempt to assess the current level and implement practices to ensure that it is at a strong enough level so as to be more predictive of student success versus the non-controllable SES variable.
4. Campuses should be cognizant of the four shaping factors (mastery experience, vicarious experience, social persuasion, and affective states) of collective efficacy and foster teaching and campus practices that positively affect all of them.

5. Districts would benefit from having some form of pre-assessment measure completed on candidates who are competing for campus leadership positions to add to the consideration matrix used to make a candidate choice. Given that the *model the way, challenge the process,* and *encourage others to act* practices show strong correlations and statistical significance, these practices should be more heavily weighted in the consideration matrix.
6. Campuses should consider teacher improvement strategies when considering improvement plans for teachers in need of assistance that foster mastery and vicarious experience since these are the strongest collective efficacy shaping sources. These could be useful on both ends of the improvement spectrum not only for teacher growth plans but also as plans to raise good teaching to a higher level.
7. Districts would benefit from having leadership training sessions that specifically focus on the three leadership practices that showed significance or a moderate correlation. It is important for staff development programs to focus on both the learning side of our organization as well as the leadership side in getting these concepts from the theory to the classroom setting.

Implications for Further Study

1. Because of both the TAKS and NCLB accountability measures and the changing demographics of students, research needs to continue on variables that can be controlled by either the principal, the school, or the district. Since

schools can not control the demographic variable of their campus, they are sure to need practices and programs that prove effective with any student body demographic.

2. Further research on the correlation of effective leadership and collective efficacy needs to continue. There needs to be a continuing body of research that explains the connections between leadership effectiveness and collective efficacy.
3. A causational study should be considered between leadership effectiveness and collective efficacy. If leadership effectiveness is related to collective efficacy as this research showed slightly, discovering if this relationship is causal would be very beneficial. Discovering principal practices that cause collective efficacy to increase would be helpful to current and prospective principals.
4. This researcher would support other correlational studies between leadership effectiveness and collective using a different leadership model. The LBDQ is a widely know leadership measure that could be used in a similar research study to determine any correlation between leadership effectiveness and collective efficacy.

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APPENDIX A

KOUZES POSNER APPROVAL LETTER

KOUZES POSNER INTERNATIONAL
15419 Banyan Lane
Monte Sereno, California 95030
FAX: (408) 354-9170

October 23, 2003

Mr. Joe Graham
802 Peebles
Hempstead, Texas 77445

Dear Joe:

Thank you for your request to use the 3rd Edition of the Leadership Practices Inventory (LPI) in your dissertation. We are willing to allow you to reproduce the instrument as outlined in your letter, at no charge, with the following understandings:

(1) That the LPI is used only for research purposes and is not sold or used in conjunction with any compensated management development activities;
(2) That copyright of the LPI, or any derivation of the instrument, is retained by Kouzes Posner International, and that the following copyright statement be included on all copies of the instrument: "Copyright © 2003 James M. Kouzes and Barry Z. Posner. All rights reserved. Used with permission.";
(3) That one (1) **bound** copy of your dissertation and one (1) copy of **all** papers, reports, articles, and the like which make use of the LPI data be sent **promptly** to our attention; and,
(4) That you agree to allow us to include an abstract of your study and any other published papers utilizing the LPI on our various websites.

If the terms outlined above are acceptable, would you indicate so by signing one (1) copy of this letter and returning it to us. Best wishes for every success with your research project.

Cordially,

Barry Z. Posner, Ph.D.
Managing Partner

I understand and agree to abide by these conditions:

(Signed) Joe Graham Date: 10/28/03

APPENDIX B

KATY ISD APPROVAL LETTER

KATY

Katy Independent School District

Darrell G. Brown, Ph.D.
Executive Director for Curriculum,
Staff Development and Accountability

September 6, 2005

Joe Graham
Memorial Parkway Junior High

Dear Mr. Graham,

The Katy Instructional Department (KID) committee met to consider your application for research in our district.

I am happy to inform you that the committee chose to approve participation in your study.

We appreciate your interest and consideration of our district and we wish you the very best in your endeavors. When your research is complete, we would appreciate a copy of the results.

Sincerely,

Darrell G. Brown

Darrell G. Brown, Ph.D.
Assistant Superintendent for Curriculum,
Staff Development and Accountability

DB/dih

APPENDIX C

REQUESTING APPROVAL LETTER

Graham, Joe

From: Graham, Joe
Sent: Tuesday, March 28, 2006 6:52 AM
To: Graham, Joe
Subject: Graham's study approval

Mr./Mrs./Dr.

I am conducting a study that investigates the relationship between collective efficacy and leadership effectiveness for my doctorate at Texas A&M University. This is a correlational study seeking to discover and describe the type of relationship between these two concepts. I am seeking your approval for your campus to participate in this study.

The study would ask for input of all your campus teachers on one of these two concepts by completing an online survey. Each teacher and campus would remain anonymous. This protects the researcher from knowing where your campus scored on both of these two concepts. The campus will be the unit of analysis meaning that each campus will have one number describing its collective efficacy and leadership levels.

Should you approve this study, I will send you a template email for you to send out in a DL-email format to your campus. This email will describe the study and will explain that participation is voluntary and anonymous. It will also have the links to the surveys. Last names starting with A to M will complete the collective efficacy survey and N to Z will complete the leadership survey. Each teacher only completes one survey.

Again, all participating campuses and participating teachers will remain anonymous. I would greatly appreciate your participation. Please reply with a yes, no, or that you would like more information.

Thank you for your time and consideration,

Joe Graham

JOE GRAHAM, Principal
Memorial Parkway Junior High
Katy ISD
(281) 237-5800

LEARNING *Focused*
PREPARING *Lives*
SUCCEEDING *in All*

APPENDIX D

INSTRUCTIONS MEMO

Graham, Joe

From:	Graham, Joe
Sent:	Monday, May 08, 2006 11:32 PM
To:	Farris, Elisa; Leethem, Lisa; Dickerson, Mindy; Paetow, Patricia; Kuylen, Elizabeth; Rodriguez, Malynn; Bartlett, Georgia; Majors, Terri; Henderson, Rhonda; Davidson, Keiko; Smuts, Leslie; Fleming, Carra; Nash, Melvin; Finnesand, Kerri; Barker, Debra; Bracewell, Becky; Brasic, Bonnie; Cammarata, Joseph; Cross, James; Hull, Richard (Rick); Keeney, Jay; Kelley, Joe K.; Leblanc, Jacob; Lee, Ronnie; Leonard, Kathleen; Leonard, Olga; McDonald, James; Pustejovsky, Steven; Rankin, Cheryl; Ricks, Kelly; Robertson, Steve; Russell, Susanna; Russell, Susanna; Salenga, Christine; Shafer, Patricia; Sheppard, Larry (Scott); Simmons, Lisa; Tompkins, OD; Truitt, David; Whitbeck, Christie
Cc:	Graham, Joe; Menius, Linda; Phillips, Janine; Tufan Adiguzel
Subject:	Graham's doctoral survey instructions
Importance:	High
Attachments:	Letter from Prin to Teachers.doc

Principals,

Thank you very much for agreeing to participate in my study. In order to ensure campus anonymity, please follow these steps below.

Overview: Basically, I am giving you the two pieces of information that need to be copied and pasted into your DL email to your staff. The first piece is the letter from you to your staff and the second more technical pieces are the links. You may find it easier to craft your campus DL email by printing these directions. Creating this email will take a couple of minutes. Please call me if you have any difficulties on my cell phone at 281-220-9869.

Procedures:

- **Start** a new DL email to your staff.
- **Type** in the subject line: Graham Doctoral Survey.
- **Minimize** it for now.

Letter to be sent:

- **Open** the attachment on this email entitled: Letter from Prin to Teachers
  - To do this, **click** on the attachment. The letter should open up in a word document.
- **Hit** the control key [Ctrl] and while holding it down, **hit** the 'A' key. All text should be highlighted.
- **Hit** the control key [Ctrl] and while holding it down, **hit** the 'C' key. This will copy all the highlighted text.
- **Click** the red 'X' at the top right of the word program to close out this document.

Maximize your campus DL email by clicking on it from the bottom tool bar.

- **Place** the cursor in the text area and **hit** the control key [Ctrl] and while holding it down, **hit** the 'V' key. This should paste the text into your DL email.
- **Minimize** it again.

To generate your campus specific links:

- **Click** this link: http://coe.tamu.edu/~jgraham/linkgen.php
- A new screen will appear that has one button called "Generate Link". **Click** it. By clicking this button, you are establishing an anonymous link specific to your campus.
- Another screen will appear with two links.
  - **Hit** the control key [Ctrl] and while holding it down, hit the 'A' key. This will highlight all links on this page.
  - **Hit** the control key [Ctrl] and while holding it down, hit the 'C' key. This will copy these links.
  - **Click** the red 'X' at the top right of this internet explorer program to close it out.

- **Maximize** your campus DL email by clicking on it from the bottom tool bar.
- **Highlight** the italicized space that reads, "*paste the links here…*"
- **Hit** the control key [Ctrl] and while holding it down, **hit** the 'V' key. This should copy these links into your campus DL email.

You should now have both the body of the text to teachers and the campus specific links at the bottom. Be sure to include your name where it says principal and any other text you see fit. If you wish, you can send me a CC copy of this email but this is not required for the purposes of this study.

Hit Send.

Since this link is specific to your campus, I ask that you keep a copy of this sent email so that if you need to resend it out, you will already have it. ***You can only hit the generate link button once for your campus.***

Again, I thank you very much for taking the time to craft this email to your staff. I wish it were easier and I appreciate your time in helping me.

Sincerely,

Joe Graham

Teachers,

Mr. Graham is a doctoral student at Texas A&M University completing work toward his Doctor of Education (Ed.D) degree in Educational Administration. The KID committee, under the direction of Dr. Darrell Brown, has approved his study to be conducted within Katy ISD. He also sought permission from each campus principal to which I granted him for our campus to participate in his study on collective efficacy and leadership. However, your participation is strictly voluntary and, if you choose to participate, your answers will be anonymous. Furthermore, our campus will remain anonymous for the purposes of this study. If you choose to not participate, simply delete this email.

If you choose to participate, click the respective buttons that correspond to the beginning letter of your last name.

Sincerely,

[principal's name]

[paste the links here by putting your cursor here and then clicking the control key [Ctrl] and then the letter 'V' at the same time.]

APPENDIX E

COLLECTIVE EFFICIENCY SURVEY

Collective Efficacy

DIRECTIONS: Indicate your level of agreement with each of the following statements from STRONGLY DISAGREE (1) to STRONGLY AGREE (6)

		Strongly Disagree 1	2	3	4	5	Strongly Agree 6
1.	Teachers in this school are able to get through to the most difficult students	○	○	○	○	○	○
2.	Teachers here are confident they will be able to motivate their students	○	○	○	○	○	○
3.	If a child doesn't want to learn teachers here give up	○	○	○	○	○	○
4.	Teachers here don't have the skills needed to produce meaningful learning	○	○	○	○	○	○
5.	Teachers in this school believe that every child can learn	○	○	○	○	○	○
6.	These students come to school ready to learn	○	○	○	○	○	○
7.	Home life provides so many advantages that students here are bound to learn	○	○	○	○	○	○
8.	Students here just aren't motivated to learn	○	○	○	○	○	○
9.	Teachers in this school do not have the skills to deal with student disciplinary problems	○	○	○	○	○	○
10.	The opportunities in this community help ensure that these students will learn	○	○	○	○	○	○
11.	Learning is more difficult at this school because students are worried about their safety	○	○	○	○	○	○
12.	Drug and alcohol abuse in the community make learning difficult for students here	○	○	○	○	○	○
13.	Feel free to make any additional comments regarding your perception of your campus' ability to effectively teach students. Please refrain from using the name of your principal.						

Please check the box that or answers these questions	
14.	I am a : ◎ Female ◎ Male
15.	Including this year, how many total years of experience do you have under the leadership of this principal?
16.	How many years of teaching experience do you have? ◎ Beginning teacher (within your first year of teaching) ◎ 1 - 5 years experience ◎ 6 - 10 years experience ◎ 11 - 20 years experience ◎ over 20 years experience
17.	I am a : ◎ African American ◎ Hispanic ◎ White ◎ Native American ◎ Asian /Pacific Islander
18.	How many years of experience do you have teaching in Katy Independent School District?
19.	How many years of experience do you have in teaching overall?

Submit

APPENDIX F

LEADERSHIP PRACTICES INVENTORY SURVEY

Leadership Practices Inventory

You will find thirty statements describing various leadership behaviors. Please read each statement carefully and using the RATING SCALE on the right, ask yourself

How frequently do I engage in the behavior described?"

- Be realistic about the extent to which you actually engage in the behavior
- Be as honest and accurate as you can be.
- DO NOT answer In terms of how you would like to behave or In terms of how you think you should behave
- DO answer in terms of how you typically behave on most days, on most projects, and with most people.
- Be thoughtful about your responses. For example, giving yourself l0s on all items is most likely not an accurate description of your behavior similarly, giving yourself all is or all 5s is most likely not an accurate description either. Most people will do some things more or less often than they do other things.
- If you feel that a statement does not apply to you, it's probably because you don't frequently engage in the behavior. In that case, assign a rating of 3 or lower.

For each statement, decide on a response and then record the corresponding number in the box to the right of the statement. After you have responded to all thirty statements, go back through the LPI one more time to make sure you have responded to each statement. Every statement must have a rating. The RATING SCALE runs from 1 to 10. Choose the number that best applies to each statement.

Almost Never	Rarely	Seldom	Once in a While	Occasionally	Sometimes	Fairly Often	Usually	Very Frequently	Almost Always
1	2	3	4	5	6	7	8	9	10

To what extent does this leader (principal) typically engage in the following behaviors?
Choose the response number that best applies to each statement and record it in the box to the right of that statement.

He or She (the principal):

1.	Sets a personal example of what he/she expects of others.	
2.	Talks about future trends that will influence how our work gets done.	
3.	Seeks out challenging opportunities that test his/her own skills and abilities.	
4.	Develops cooperative relationships amoung the people he/she works with.	
5.	Praises people for a job well done.	
6.	Spends time and energy making certain that the people he/she works with adhere to the principles and standards that we have agreed on.	
7.	Describes a compelling image of what our future could be like.	
8.	Challenges people to try out new and innovative ways to do their work.	
9.	Actively listens to diverse points of view.	
10.	Makes it a point to let people know about his/her confidence in their abilities.	
11.	Follows through on promises and commitments he/she makes.	
12.	Appeals to others to share an exciting dream of the future.	
13.	Searches outside the formal boundaries of his/her organization for innovative ways to improve what we do.	
14.	Treats others with dignity and respect.	
15.	Makes sure that people are creatively rewarded for their contributions to the success of projects.	
16.	Asks for feedback on how his/her actions affect other people's performance.	
17.	Shows others how their long-term interests can be realized by enlisting in a common vision.	

18.	Asks "What can we learn?" when things don't go as expected.	
19.	Supports the decisions that people make on their own.	
20.	Publicly recognizes people who exemplify commitment to shared values.	
21.	Builds consensus around a common set of values for running our organization.	
22.	Paints the "big picture" of what we aspire to accomplish.	
23.	Makes certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs that we work on.	
24.	Gives people a great deal of freedom and choice in deciding how to do their work.	
25.	Finds ways to celebrate accomplishments.	
26.	Is clear about his/her philosophy of leadership.	
27.	Speaks with genuine conviction about the higher meaning and purpose of our work.	
28.	Experiments and take risks, even when there is a chance of failure.	
29.	Ensures that people grow in their jobs by learning new skills and developing themselves.	
30.	Gives the members of the team lots of appreciation and support for their contributions.	
31.	Feel free to make any additional comments regarding your perception of your campus' leadership effectiveness. Please refrain from using the name of your principal.	

Please check the box that or answers these questions

32.	I am a : ◎ Female ◎ Male	

33.	Including this year, how many total years of experience do you have under the leadership of this principal?	
34.	How many years of teaching experience do you have? ◎ Beginning teacher (within your first year of teaching) ◎ 1 - 5 years experience ◎ 6 - 10 years experience ◎ 11 - 20 years experience ◎ over 20 years experience	
35.	I am a : ◎ African American ◎ Hispanic ◎ White ◎ Native American ◎ Asian /Pacific Islander	
36.	How many years of experience do you have teaching in Katy Independent School District?	
37.	How many years of experience do you have in teaching overall?	

Submit

Thank you for your participation in the study. If you have any questions about this study you can contact Joe Graham at (281) 398-5088 (jwgraham@houston.rr.com) or John Hoyle at (979) 845-2748 (jhoyle@tamu.edu), College of Education and Human Resource Development, 4226 TAMU, Texas A&M University, College Station, Texas 77843-4226, with any questions about the study.

VITA

JOE WILSON GRAHAM
20726 Lariat Canyon Drive
Katy, Texas 77450

Educational History

Texas A&M University, College Station, Texas
Ed.D. in Educational Administration
May 2007

Texas A&M University, College Station, Texas
M.S. in Educational Administration
May 1998

Texas A&M University, College Station, Texas
B.S. in Zoology
May 1992

Employment History

2004 - present	Principal, Memorial Parkway Junior High School Katy ISD, Katy, Texas
2004 - 2004	Assistant Principal, Cinco Ranch High School Katy ISD, Katy, Texas
2003 - 2003	Public Relations Hempstead ISD, Hempstead, Texas
2000 - 2003	Principal, Hempstead High School Hempstead ISD, Hempstead, Texas
1998 - 2000	Principal, Hempstead Elementary School Hempstead ISD, Hempstead, Texas
1997 - 1997	Assistant Principal, Hempstead Elementary School Hempstead ISD, Hempstead, Texas
1994 - 1997	Science Teacher, Brenham High School Brenham ISD, Brenham, Texas